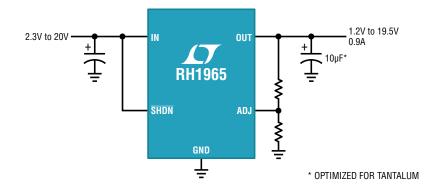
# Low Noise LDO Regulator Protects Against Fault Conditions



The RH1965 is a radiation hardened low noise low dropout linear regulator with an integrated PNP pass transistor that operates from a single supply of as little as 1.8V. It features extensive internal protection, including current limit with foldback protection, thermal limiting and protection against reverse polarity to safeguard the regulator and the load. A shutdown pin reduces quiescent current to <1µA and the very low output noise makes it ideal for sensitive RF and instrumentation applications.

#### **Features**

- Processed in Compliance with Linear's Certified MIL-PRF-38535 Class V Flow
- Output Current: 0.9A
- Typical Dropout Voltage: 300mV at 0.9A
- Low Noise: 40µV<sub>RMS</sub> (10Hz to 100kHz)
- 500µA Quiescent Current
- Wide Input Voltage Range: 1.8V to 20V
- No Protection Diodes Needed
- Controlled Quiescent Current in Dropout
- Adjustable Output from 1.20V to 19.5V
- < 1µA Quiescent Current in Shutdown
- Stable with 10µF Output Capacitor
- Reverse-Battery Protection
- No Reverse Current
- Current Limit with Foldback Protection
- Thermal Limiting

### Radiation Performance

- Total Ionizing Dose (TID) Tolerance, per TM1019.8, MIL-STD-883:
  - 200kRad (Si), per Condition A at 50Rads(Si)/sec
  - 100kRad (Si), per Condition D at 10mRads(Si)/sec
  - ELDRS Pass 100kRad(Si)
- Displacement Damage Defect (DDD) Tolerance
  - Up to 1E12 Neutrons/cm<sup>2</sup>
- Single Event Latchup (SEL) Threshold Linear Energy Transfer (LET)
  - To Be Characterized

#### Availability

RH1965 dice are available from Linear Technology for use in custom hybrids. Packaged products are developed by our trusted partners, Cobham (Aeroflex) and Anaren (MS Kennedy).

MSK5965 0.9A Low Noise LDO Regulator with Shutdown (FP-10) in Development



## Radiation Hardened Product Range

Part Type RH101A				
	Description	Typical GBW (MHz)	Package	Partner Products
	Operational Amplifier	0.1	DICE, TO-5, DIP-8, FP-10	
				WSR0041, WSR100
RH1078	Dual Micropower Precision Op Amp, 120μV Offset	0.2	DICE, TO-5, DIP-8, FP-10	
RH07	Precision Operational Amplifier	0.4	DICE, TO-5, DIP-8, FP-10	
RH108A	General Purpose Operational Amplifier	0.5	DICE, TO-5, DIP-8, FP-10	
RH1013	Dual Precision Operational Amplifier, 300µV Offset	0.5	DICE, TO-5, DIP-8, FP-10	
RH1014	Quad Precision Operational Amplifier	0.5	DIP-14, FP-14	
			-	HOWARD HOWARD IN HOWARD
RH6105	Rail-to-Rail Current Sense Amplifier	1.0	DICE	MSK196, MSK496 (Quad), MSK6000
RH27A	Precision Operational Amplifier, 35µV Offset	5.0	FP-10	
RH27	Precision Operational Amplifier, 55µV and 100µV Offset	5.0	DICE, TO-5, DIP-8, FP-10	
RH1056A	Precision High Speed JFET Input Operational Amplifier	6.5	TO-5, FP-10	
	0 1 1 1			
RH1056	Precision High Speed JFET Input Operational Amplifier	6.5	DICE	
RH1498	Dual 6V/µs Rail-to-Rail Input/Output Precision C-Load	10	DICE, FP-10	MSK198RHL
RH1499	Quad 6V/µs Rail-to-Rail Input/Output Precision C-Load	10	FP-14	
RH118	Precision/High Speed Operational Amplifier	15	TO-5, DIP-8, FP-10	
RH1128	Ultralow Noise Precision Op Amp, A <sub>V</sub> ≥ 1	20	DICE, FP-10	
	1 11 1			
RH37	Precision 45MHz Operational Amplifier	45	DICE, TO-5, DIP-8, FP-10	
RH1028	Ultralow Noise Precision Op Amp, A <sub>V</sub> ≥ 2 or A <sub>V</sub> ≤ -1	75	DICE, FP-10	
RH1814	Dual 3mA, 100MHz, 750V/µs Operational Amplifier	100	DICE	
RH1814	Quad 3mA, 100MHz, 750V/µs Operational Amplifier	100	FP-14	
RH6200	165MHz, Rail-to-Rail I/O, 0.95nV/√Hz Low Noise, Op Amp	165	DICE, FP-10	
COMPARATORS	<u> </u>			
Part Type	Description	Typical t <sub>PD</sub> (nS)	Package	Partner Products
RH1016	UltraFast™ 10ns Precision Comparator	10	DICE, FP-10	
	·			
RH119	Dual High Performance Comparator	80	DICE, TO-5, DIP-8, FP-10	
RH1011	Precision Voltage Comparator	150	DICE, TO-5, DIP-8, FP-10	
RH111	Voltage Comparator, (Please Use RH1011 for New Designs)	200	TO-5, DIP-8, FP-10	
VOLTAGE REFE				<u></u>
Part Type	Description	TC May nam/90	Package	Partner Products
	· · · · · · · · · · · · · · · · · · ·	T.C. Max ppm/°C		Partner Products
RH1034-1.2	1.2V Micropower Dual Reference with 7V Aux	60	TO-46, FP-10	
5962R8961002	2.5V Precision Reference - SMD Version of RH1009	35	TO-46, FP-10	
RH1009	2.5V Precision Reference - SCD Version	35	DICE, TO-46, FP-10	MSK109, MSK110 (Dual)
RH1021-5	5V Precision Reference	5-20	DICE, TO-5, FP-10	Morrio (Baai)
RH129A	6.9V Precision Reference	10	TO-46	
RH1021-7	7V Precision Reference	5-20	TO-5	
RH1021-10	10V Precision Reference	5-20	DICE, TO-5, FP-10	
DATA CONVERT		0 20	BIOE, 10 0,11 10	
Part Type	Description	F <sub>S</sub> (ksps)	Package	Partner Products
LTC1604	16-Bit, 333ksps Sampling ADC with Shutdown	333	SSOP-36	
RH1419	14-Bit, 800ksps Sampling ADC with Shutdown	800	DICE	RAD1419
	ULATOR DRIVER			
Part Type	Description	Accuracy (%)	Package	Partner Products
RH1573	10V, LDO Regulator Driver, Up to 5A with External PNP	1.0	DICE	MSK5800, MSK5805, MSK5810, MSK5820, MSK5821, MSK5822, MSK5823,
		I		MSK5824, MSK5825, MSK5826, MSK5950
POSITIVE LINE	AR REGULATORS			
Part Type	Description	1 (4)	Doolsons	Partner Products
Part IVDe	Description	I <sub>OUT</sub> (A)	Package	Partner Products
RH1086H	25V, 0.5A Positive Adjustable Voltage LDO Regulator	0.5	DICE, TO-39	
	25V, 0.5A Positive Adjustable Voltage LDO Regulator 40V, 0.5A Positive Adjustable Regulator	0.5 0.5	DICE, TO-39 DICE, TO-39	
RH1086H RH117H	40V, 0.5A Positive Adjustable Regulator	0.5	DICE, TO-39	
RH1086H				MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953,
RH1086H RH117H RH3080	40V, 0.5A Positive Adjustable Regulator 40V, 0.9A Adjustable, Single Resistor LDO Regulator	0.5 0.9	DICE, TO-39 DICE	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668
RH1086H RH117H RH3080 RH1965	40V, 0.5A Positive Adjustable Regulator 40V, 0.9A Adjustable, Single Resistor LDO Regulator 20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown	0.5 0.9	DICE, TO-39 DICE DICE	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965
RH1086H RH117H RH3080	40V, 0.5A Positive Adjustable Regulator 40V, 0.9A Adjustable, Single Resistor LDO Regulator	0.5 0.9	DICE, TO-39 DICE	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive +
RH1086H RH117H RH3080 RH1965	40V, 0.5A Positive Adjustable Regulator 40V, 0.9A Adjustable, Single Resistor LDO Regulator 20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown	0.5 0.9	DICE, TO-39 DICE DICE	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965
RH1086H RH117H RH3080 RH1965	40V, 0.5A Positive Adjustable Regulator 40V, 0.9A Adjustable, Single Resistor LDO Regulator 20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown	0.5 0.9	DICE, TO-39 DICE DICE	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive +
RH1086H RH117H RH3080 RH1965 RH1086K	40V, 0.5A Positive Adjustable Regulator 40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown 25V, 1.5A Positive Adjustable Voltage LDO Regulator	0.5 0.9 <b>0.9</b> 1.5	DICE, TO-39 DICE DICE DICE, TO3	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG8652  MSK5972, VRG8660, Dual Regulators: VRG8607, VRG8608, Positive +
RH1086H RH117H RH3080 RH1965 RH1086K	40V, 0.5A Positive Adjustable Regulator 40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown 25V, 1.5A Positive Adjustable Voltage LDO Regulator	0.5 0.9 <b>0.9</b> 1.5	DICE, TO-39 DICE DICE DICE, TO3	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG8652, VRG86592, VRG8660, Dual Regulators: VRG8607, VRG8608, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5914, MSK5915, MSK5914, MSK5915, MSK5915, MSK5915, MSK5915, MSK5915, MSK5915, MSK5916, MSK5916, MSK5916, MSK5916, MSK5917, MSK5917, MSK5917, MSK5918, MSK5
RH1086H RH117H RH3080 RH1965 RH1086K	40V, 0.5A Positive Adjustable Regulator 40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown 25V, 1.5A Positive Adjustable Voltage LDO Regulator  40V, 1.5A Positive Adjustable Regulator	0.5 0.9 0.9 1.5	DICE, TO-39 DICE DICE DICE, TO3 DICE, TO3	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG8652, WSK5972, VRG8660, Dual Regulators: VRG8667, VRG8608, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5919, VRG8601, VRG8602
RH1086H RH117H RH3080 RH1965 RH1086K RH117K	40V, 0.5A Positive Adjustable Regulator 40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown 25V, 1.5A Positive Adjustable Voltage LDO Regulator  40V, 1.5A Positive Adjustable Regulator  18V, 2.8A Adjustable, Single Resistor LDO Regulator	0.5 0.9 0.9 1.5	DICE, TO-39 DICE DICE DICE, TO3 DICE, TO3 DICE, TO3	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG8652, VRG8668, Positive + Negative Regulators: MSK5912, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, WSK5918, MSK5919, VRG8601, VRG8602, MSK5918, MSK5918, MSK5919, VRG8601, VRG8602, VRG8697, VRG8698, MSK5983, MSK5984, MSK5985, MSK5986, VRG8669, VRG8697, VRG8698
RH1086H RH117H RH3080 RH1965 RH1086K	40V, 0.5A Positive Adjustable Regulator 40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown 25V, 1.5A Positive Adjustable Voltage LDO Regulator  40V, 1.5A Positive Adjustable Regulator	0.5 0.9 0.9 1.5	DICE, TO-39 DICE DICE DICE, TO3 DICE, TO3	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG8652  MSK5972, VRG8660, Dual Regulators: VRG8607, VRG8608, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5919, VRG8607, VRG8602  MSK5983, MSK5984, MSK5985, MSK5986, VRG8699, VRG8697, VRG8698  MSK5971, Positive + Negative Regulators: MSK5930, MSK5931, MSK5932,
RH1086H RH117H RH3080 RH1965 RH1086K RH117K	40V, 0.5A Positive Adjustable Regulator 40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown 25V, 1.5A Positive Adjustable Voltage LDO Regulator  40V, 1.5A Positive Adjustable Regulator  18V, 2.8A Adjustable, Single Resistor LDO Regulator	0.5 0.9 0.9 1.5	DICE, TO-39 DICE DICE DICE, TO3 DICE, TO3 DICE, TO3	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5967, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG8652  MSK5970, VRG8660, Dual Regulators: VRG8657, VRG8608, Positive + Negative Regulators: VRG8651, VRG8652  MSK5972, VRG8660, Dual Regulators: VRG8607, VRG8608, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5918, VRG8601, VRG8602  MSK5983, MSK5984, MSK5985, MSK5986, VRG8669, VRG8697, VRG8698  MSK5971, Positive + Negative Regulators: MSK5930, MSK5931, MSK5932, MSK5933, MSK5934, MSK5934, MSK5939, MSK5939, MSK5938, MSK59
RH1086H RH117H RH3080 RH1965 RH1086K RH117K	40V, 0.5A Positive Adjustable Regulator 40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown 25V, 1.5A Positive Adjustable Voltage LDO Regulator  40V, 1.5A Positive Adjustable Regulator  18V, 2.8A Adjustable, Single Resistor LDO Regulator	0.5 0.9 0.9 1.5	DICE, TO-39 DICE DICE DICE, TO3 DICE, TO3 DICE, TO3	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG8652  MSK5972, VRG8660, Dual Regulators: VRG8607, VRG8608, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5919, VRG8607, VRG8602  MSK5983, MSK5984, MSK5985, MSK5986, VRG8699, VRG8697, VRG8698  MSK5971, Positive + Negative Regulators: MSK5930, MSK5931, MSK5932,
RH1086H RH117H RH3080 RH1965 RH1086K RH117K RH3083 RH1085	40V, 0.5A Positive Adjustable Regulator  40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown  25V, 1.5A Positive Adjustable Voltage LDO Regulator  40V, 1.5A Positive Adjustable Regulator  18V, 2.8A Adjustable, Single Resistor LDO Regulator  30V, 3A Positive Adjustable Voltage LDO Regulator	0.5 0.9 0.9 1.5 1.5	DICE, TO-39 DICE DICE DICE, TO3 DICE, TO3 DICE, TO3 DICE, TO3	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5967, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG8652  MSK5970, VRG8660, Dual Regulators: VRG8657, VRG8608, Positive + Negative Regulators: VRG8651, VRG8652  MSK5972, VRG8660, Dual Regulators: VRG8607, VRG8608, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5918, VRG8601, VRG8602  MSK5983, MSK5984, MSK5985, MSK5986, VRG8669, VRG8697, VRG8698  MSK5971, Positive + Negative Regulators: MSK5930, MSK5931, MSK5932, MSK5933, MSK5934, MSK5934, MSK5939, MSK5939, MSK5938, MSK59
RH1086H RH117H RH3080  RH1965 RH1086K RH117K  RH3083 RH1085 RH1085	40V, 0.5A Positive Adjustable Regulator  40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown  25V, 1.5A Positive Adjustable Voltage LDO Regulator  40V, 1.5A Positive Adjustable Regulator  18V, 2.8A Adjustable, Single Resistor LDO Regulator  30V, 3A Positive Adjustable Voltage LDO Regulator  25V, 5A Positive Adjustable Voltage LDO Regulator	0.5 0.9 0.9 1.5 1.5	DICE, TO-39 DICE DICE DICE, TO3 DICE, TO3 DICE, TO3 DICE, TO3	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG8665, VRG8668, Positive + Negative Regulators: WSK5911, MSK5912, MSK5912, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5919, VRG8601, VRG8602  MSK5983, MSK5984, MSK5985, MSK5986, VRG8669, VRG8697, VRG8698  MSK5971, Positive + Negative Regulators: MSK5930, MSK5931, MSK5932, MSK5933, MSK5934, MSK5935, MSK5936, MSK5937, MSK5938, MSK5939  VRG8684, Dual Regulators: VRG8687, VRG8688, Positive + Negative
RH1086H RH117H RH3080  RH1965 RH1086K RH117K  RH3083 RH1085 RH1084  NEGATIVE LINE	40V, 0.5A Positive Adjustable Regulator  40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown  25V, 1.5A Positive Adjustable Voltage LDO Regulator  40V, 1.5A Positive Adjustable Regulator  18V, 2.8A Adjustable, Single Resistor LDO Regulator  30V, 3A Positive Adjustable Voltage LDO Regulator  25V, 5A Positive Adjustable Voltage LDO Regulator	0.5 0.9 0.9 1.5 1.5 2.8 3.0	DICE, TO-39 DICE  DICE DICE, TO3  DICE, TO3  DICE, TO3  DICE DICE, TO3  DICE DICE, TO3	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG8652, VRG8668, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5919, VRG8608, Positive + Negative Regulators: MSK5918, MSK5919, VRG8601, VRG8602  MSK5983, MSK5984, MSK5985, MSK5986, VRG8669, VRG8697, VRG8698  MSK5971, Positive + Negative Regulators: MSK5930, MSK5931, MSK5932, MSK5933, MSK5934, MSK5935, MSK5936, MSK5937, MSK5938, MSK5939  VRG8684, Dual Regulators: VRG8687, VRG8688, Positive + Negative Regulators: VRG8688, VRG8688, Positive + Negative Regulators: VRG8688, VRG8688, Positive + Negative
RH1086H RH117H RH3080  RH1965 RH1086K RH117K  RH3083 RH1085 RH1084  NEGATIVE LINE Part Type	40V, 0.5A Positive Adjustable Regulator  40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown  25V, 1.5A Positive Adjustable Voltage LDO Regulator  40V, 1.5A Positive Adjustable Regulator  18V, 2.8A Adjustable, Single Resistor LDO Regulator  30V, 3A Positive Adjustable Voltage LDO Regulator  25V, 5A Positive Adjustable Voltage LDO Regulator  EAR REGULATORS  Description	0.5 0.9 0.9 1.5 1.5 2.8 3.0 5.0	DICE, TO-39 DICE  DICE DICE, TO3  DICE, TO3  DICE, TO3  DICE DICE, TO3  DICE  DICE DICE, TO3	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG8665, VRG8668, Positive + Negative Regulators: MSK5911, MSK5912, MSK5912, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5919, VRG8601, VRG8602  MSK5983, MSK5984, MSK5985, MSK5986, VRG8697, VRG8698, VRG8697, VRG8698, MSK59171, Positive + Negative Regulators: MSK5937, MSK5931, MSK5932, MSK5933, MSK5934, MSK5935, MSK5936, MSK5937, MSK5938, MSK5939, VRG8684, Dual Regulators: VRG8688, Positive + Negative Regulators: MSK5937, MSK5938, MSK5939, MSK
RH1086H RH117H RH3080  RH1965 RH1086K RH117K  RH3083 RH1085 RH1084  NEGATIVE LINE	40V, 0.5A Positive Adjustable Regulator  40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown  25V, 1.5A Positive Adjustable Voltage LDO Regulator  40V, 1.5A Positive Adjustable Regulator  18V, 2.8A Adjustable, Single Resistor LDO Regulator  30V, 3A Positive Adjustable Voltage LDO Regulator  25V, 5A Positive Adjustable Voltage LDO Regulator	0.5 0.9 0.9 1.5 1.5 2.8 3.0	DICE, TO-39 DICE  DICE DICE, TO3  DICE, TO3  DICE, TO3  DICE DICE, TO3  DICE DICE, TO3	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG8652, VRG8668, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5919, VRG8608, Positive + Negative Regulators: MSK5918, MSK5919, VRG8601, VRG8602  MSK5983, MSK5984, MSK5985, MSK5986, VRG8669, VRG8697, VRG8698  MSK5971, Positive + Negative Regulators: MSK5930, MSK5931, MSK5932, MSK5933, MSK5934, MSK5935, MSK5936, MSK5937, MSK5938, MSK5939  VRG8684, Dual Regulators: VRG8687, VRG8688, Positive + Negative Regulators: VRG8688, VRG8688, Positive + Negative Regulators: VRG8688, VRG8688, Positive + Negative
RH1086H RH117H RH3080  RH1965 RH1086K RH117K  RH3083 RH1085 RH1084  NEGATIVE LINE Part Type	40V, 0.5A Positive Adjustable Regulator  40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown  25V, 1.5A Positive Adjustable Voltage LDO Regulator  40V, 1.5A Positive Adjustable Regulator  18V, 2.8A Adjustable, Single Resistor LDO Regulator  30V, 3A Positive Adjustable Voltage LDO Regulator  25V, 5A Positive Adjustable Voltage LDO Regulator  EAR REGULATORS  Description	0.5 0.9 0.9 1.5 1.5 2.8 3.0 5.0	DICE, TO-39 DICE  DICE DICE, TO3  DICE, TO3  DICE, TO3  DICE DICE, TO3  DICE  DICE DICE, TO3	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG8652  MSK5972, VRG8660, Dual Regulators: VRG8607, VRG8608, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5914, MSK5915, MSK5917, MSK5917, MSK5918, MSK5919, VRG8601, VRG8602  MSK5983, MSK5984, MSK5985, MSK5986, VRG8669, VRG8697, VRG8698, MSK5937, Positive + Negative Regulators: MSK5930, MSK5931, MSK5932, MSK5933, MSK5934, MSK5935, MSK5936, MSK5937, MSK5938, MSK5939  VRG8664, Dual Regulators: VRG86687, VRG8688, Positive + Negative Regulators: VRG8654  Partner Products  MSK5973, VRG8661, Dual Regulators: VRG8609, VRG8610, Positive + Negative Regulators: MSK5911, MSK5915, MSK5914, MSK5914, MSK5915, MSK5914, MSK5915, MSK5914, MSK5915, MSK5914, MSK5915, MSK5915, MSK5914, MSK5915,
RH1086H RH117H RH3080  RH1965 RH1086K RH117K  RH3083 RH1085 RH1084  NEGATIVE LINE Part Type RH137H	40V, 0.5A Positive Adjustable Regulator  40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown  25V, 1.5A Positive Adjustable Voltage LDO Regulator  40V, 1.5A Positive Adjustable Regulator  18V, 2.8A Adjustable, Single Resistor LDO Regulator  30V, 3A Positive Adjustable Voltage LDO Regulator  25V, 5A Positive Adjustable Voltage LDO Regulator  EAR REGULATORS  Description  30V, 0.5A Negative Adjustable Voltage Regulator	0.5 0.9 0.9 1.5 1.5 2.8 3.0 5.0	DICE, TO-39 DICE DICE DICE, TO3 DICE, TO3 DICE, TO3 DICE DICE, TO3 DICE DICE, TO3 DICE	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG8665, VRG86609, VRG86609, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5919, VRG8601, VRG8602  MSK5983, MSK5984, MSK5985, MSK5986, VRG8669, VRG8697, VRG8698, MSK5917, Positive + Negative Regulators: MSK5930, MSK5931, MSK5932, MSK5933, MSK5934, MSK5935, MSK5936, MSK5937, MSK5939, MSK5939, VRG8684, Dual Regulators: VRG86687, VRG8688, Positive + Negative Regulators: VRG8669, VRG8691, VRG8688, Positive + Negative Regulators: VRG8661, Dual Regulators: VRG8669, VRG8661, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5919, VRG8601, VRG8603, Positive + Negative Regulators: MSK5917, MSK5918, MSK5919, WRG8601, VRG8603, MSK5931, MSK5930, MSK5930, MSK5930, MSK5930, MSK5931, MSK5930, MSK5937, MSK59
RH1086H RH117H RH3080 RH1965 RH1086K RH117K  RH3083 RH1085 RH1084  NEGATIVE LINE Part Type RH137H RH137K  RH1185A	40V, 0.5A Positive Adjustable Regulator  40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown  25V, 1.5A Positive Adjustable Voltage LDO Regulator  40V, 1.5A Positive Adjustable Regulator  18V, 2.8A Adjustable, Single Resistor LDO Regulator  30V, 3A Positive Adjustable Voltage LDO Regulator  25V, 5A Positive Adjustable Voltage LDO Regulator  EAR REGULATORS  Description  30V, 0.5A Negative Adjustable Voltage Regulator  30V, 1.5A Negative Adjustable Voltage Regulator  35V, 3A Negative LDO with Adjustable Current Limit	0.5 0.9 1.5 1.5 2.8 3.0 5.0  Iout (A) 0.5 1.5	DICE, TO-39 DICE  DICE DICE, TO3  DICE, TO3  DICE DICE, TO3  DICE DICE, TO3  DICE DICE, TO3  DICE	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG8665, VRG8668, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5919, VRG8601, VRG8602  MSK5983, MSK5984, MSK5984, MSK5986, WRG8669, VRG8697, VRG8698  MSK5971, Positive + Negative Regulators: WSK5930, MSK5931, MSK5932, MSK5933, MSK5934, MSK5935, MSK5936, MSK5937, MSK5938, MSK5939, VRG8684, Dual Regulators: VRG8687, VRG8688, Positive + Negative Regulators: VRG8669, VRG8671, Positive + Negative Regulators: VRG8661, Dual Regulators: WRG8684, WRG8684, Positive + Negative Regulators: WSK5911, MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5919, VRG8601, VRG8602  MSK5916, MSK5917, MSK5918, MSK5919, VRG8601, VRG8602
RH1086H RH117H RH3080 RH1965 RH1086K RH117K  RH3083 RH1085 RH1084  NEGATIVE LINE Part Type RH137H RH137K  RH1185A	40V, 0.5A Positive Adjustable Regulator  40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown  25V, 1.5A Positive Adjustable Voltage LDO Regulator  40V, 1.5A Positive Adjustable Regulator  18V, 2.8A Adjustable, Single Resistor LDO Regulator  30V, 3A Positive Adjustable Voltage LDO Regulator  25V, 5A Positive Adjustable Voltage LDO Regulator  EAR REGULATORS  Description  30V, 0.5A Negative Adjustable Voltage Regulator  30V, 1.5A Negative Adjustable Voltage Regulator	0.5 0.9 1.5 1.5 2.8 3.0 5.0  Iout (A) 0.5 1.5	DICE, TO-39 DICE  DICE DICE, TO3  DICE, TO3  DICE, TO3  DICE  DICE, TO3  DICE  DICE, TO3  DICE  DICE, TO-39 DICE, TO-39 DICE, TO3	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG86652, WSK5972, VRG8660, Dual Regulators: VRG86607, VRG8608, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5919, VRG8601, VRG8602  MSK5983, MSK5984, MSK5985, MSK5986, VRG8669, VRG8697, VRG8698, MSK5971, Positive + Negative Regulators: MSK5930, MSK5931, MSK5932, MSK5933, MSK5934, MSK5935, MSK5936, MSK5937, MSK5938, MSK5939, VRG8684, Dual Regulators: VRG8687, VRG8688, Positive + Negative Regulators: VRG8654  Partner Products  MSK5973, VRG8661, Dual Regulators: VRG8609, VRG8610, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5919, VRG8601, VRG8602, MSK5917, MSK5916, MSK5919, WRG8601, VRG8603, Positive + Negative Regulators: MSK5910, MSK5910, MSK5930, MSK5930, MSK5931, MSK5931, MSK5933, MSK5933, MSK5933, MSK5933, MSK5933, MSK5933, MSK5933, MSK5933, MSK5933, MSK5936, MSK5937, MSK5937, MSK5938, MSK5937, MSK5937, MSK5938, MSK5937, MSK5937, MSK5938, MSK5937, MSK5937, MSK5937, MSK5938, MSK5936, MSK5937, MSK5937, MSK5938, MSK5937, MSK5937, MSK5937, MSK5938, MSK5936, MSK5937, MSK5937, MSK5937, MSK5938, MSK5937, MSK5937, MSK5937, MSK5937, MSK5938, MSK5937, MSK
RH1086H RH117H RH3080 RH1965 RH1086K RH117K  RH3083 RH1085 RH1084  NEGATIVE LINE Part Type RH137H RH137K  RH1185A	40V, 0.5A Positive Adjustable Regulator  40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown  25V, 1.5A Positive Adjustable Voltage LDO Regulator  40V, 1.5A Positive Adjustable Regulator  18V, 2.8A Adjustable, Single Resistor LDO Regulator  30V, 3A Positive Adjustable Voltage LDO Regulator  25V, 5A Positive Adjustable Voltage LDO Regulator  EAR REGULATORS  Description  30V, 0.5A Negative Adjustable Voltage Regulator  30V, 1.5A Negative Adjustable Voltage Regulator  35V, 3A Negative LDO with Adjustable Current Limit	0.5 0.9 1.5 1.5 2.8 3.0 5.0  Iout (A) 0.5 1.5	DICE, TO-39 DICE  DICE DICE, TO3  DICE, TO3  DICE DICE, TO3  DICE DICE, TO3  DICE DICE, TO3  DICE	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG86652, WSK5972, VRG8660, Dual Regulators: VRG86607, VRG8608, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5919, VRG8601, VRG8602  MSK5983, MSK5984, MSK5985, MSK5986, VRG8669, VRG8697, VRG8698, MSK5971, Positive + Negative Regulators: MSK5930, MSK5931, MSK5932, MSK5933, MSK5934, MSK5935, MSK5936, MSK5937, MSK5938, MSK5939, VRG8684, Dual Regulators: VRG8687, VRG8688, Positive + Negative Regulators: VRG8654  Partner Products  MSK5973, VRG8661, Dual Regulators: VRG8609, VRG8610, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5919, VRG8601, VRG8602, MSK5917, MSK5916, MSK5919, WRG8601, VRG8603, Positive + Negative Regulators: MSK5910, MSK5910, MSK5930, MSK5930, MSK5931, MSK5931, MSK5933, MSK5933, MSK5933, MSK5933, MSK5933, MSK5933, MSK5933, MSK5933, MSK5933, MSK5936, MSK5937, MSK5937, MSK5938, MSK5937, MSK5937, MSK5938, MSK5937, MSK5937, MSK5938, MSK5937, MSK5937, MSK5937, MSK5938, MSK5936, MSK5937, MSK5937, MSK5938, MSK5937, MSK5937, MSK5937, MSK5938, MSK5936, MSK5937, MSK5937, MSK5937, MSK5938, MSK5937, MSK5937, MSK5937, MSK5937, MSK5938, MSK5937, MSK
RH1086H RH117H RH3080  RH1965 RH1086K  RH117K  RH3083 RH1085 RH1084  NEGATIVE LINE Part Type RH137H RH137K  RH1185A  SWITCHING RE Part Type	40V, 0.5A Positive Adjustable Regulator  40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown  25V, 1.5A Positive Adjustable Voltage LDO Regulator  40V, 1.5A Positive Adjustable Regulator  18V, 2.8A Adjustable, Single Resistor LDO Regulator  30V, 3A Positive Adjustable Voltage LDO Regulator  25V, 5A Positive Adjustable Voltage LDO Regulator  25V, 5A Positive Adjustable Voltage LDO Regulator  25V, 5A Positive Adjustable Voltage Regulator  30V, 0.5A Negative Adjustable Voltage Regulator  30V, 1.5A Negative Adjustable Voltage Regulator  35V, 3A Negative LDO with Adjustable Current Limit	0.5 0.9 1.5 1.5 2.8 3.0 5.0  lout (A) 0.5 1.5 3.0	DICE, TO-39 DICE  DICE DICE, TO3  DICE, TO3  DICE, TO3  DICE  DICE, TO3  DICE  Package DICE, TO-39 DICE, TO3  DICE, TO3	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG86652, VRG86607, VRG86608, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5911, MSK5912, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5918, MSK5984, MSK5986, MSK5986, VRG8669, VRG8669, VRG8697, VRG8698, MSK5931, MSK5931, MSK5931, MSK5931, MSK5933, MSK5934, MSK5935, MSK5936, MSK5937, MSK5931, MSK5939, MSK5938, MSK5938, MSK5939, VRG8664, Dual Regulators: VRG8688, Positive + Negative Regulators: VRG8661, Dual Regulators: VRG8688, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5917, MSK5917, MSK5918, MSK5919, VRG8601, VRG8602, VRG8603, VRG8603, VRG8603, VRG8603, VRG8603, VRG8603, VRG8603, MSK5931, MSK5915, MSK5915, MSK5916, MSK5917, MSK5918, MSK5919, VRG8601, VRG8602, MSK5931, MSK5932, MSK5933, VRG8664  Partner Products
RH1086H RH117H RH3080  RH1965 RH1086K  RH117K  RH3083 RH1085  RH1084  NEGATIVE LINE Part Type RH137H RH137K  RH1185A  SWITCHING RE Part Type RH1959	40V, 0.5A Positive Adjustable Regulator  40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator  25V, 1.5A Positive Adjustable Voltage LDO Regulator  40V, 1.5A Positive Adjustable Regulator  18V, 2.8A Adjustable, Single Resistor LDO Regulator  30V, 3A Positive Adjustable Voltage LDO Regulator  25V, 5A Positive Adjustable Voltage LDO Regulator  25V, 5A Positive Adjustable Voltage LDO Regulator  EAR REGULATORS  Description  30V, 0.5A Negative Adjustable Voltage Regulator  35V, 3A Negative Adjustable Voltage Regulator  35V, 3A Negative Adjustable Voltage Regulator  36V, 4.5A SOURT Adjustable Current Limit	0.5 0.9 1.5 1.5 2.8 3.0 5.0  lour (A) 0.5 1.5 3.0	DICE, TO-39 DICE  DICE DICE, TO3 DICE, TO3  DICE, TO3  DICE, TO3  DICE, TO3  DICE, TO3  DICE, TO-39	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG8652, VRG8669, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5919, VRG8601, VRG8602  MSK5983, MSK5984, MSK5984, MSK5986, MSK5980, VRG8697, VRG8698, VRG8697, VRG8698, MSK5983, MSK5983, MSK5983, MSK5983, MSK5983, MSK5983, MSK5983, MSK5983, MSK5937, Positive + Negative Regulators: MSK5937, MSK5937, MSK5932, MSK5937, VRG8684, Dual Regulators: VRG8687, VRG8688, Positive + Negative Regulators: VRG8663, VRG8654  Partner Products  MSK5973, VRG8661, Dual Regulators: VRG8609, VRG8610, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5919, VRG8601, VRG8602  MSK5940, VRG8663, Positive + Negative Regulators: MSK5930, MSK5931, MSK5932, MSK5933, MSK5933, MSK5933, MSK5933, MSK5933, MSK5933, MSK5933, MSK5933, MSK5933, MSK5934, MSK5935, MSK5936, MSK5937, MSK5939, VRG8651, VRG8652, VRG8653, VRG8654  Partner Products  MSK5044, MSK5048, MSK5052, MSK5059
RH1086H RH117H RH3080  RH1965 RH1086K  RH117K  RH3083 RH1085  RH1084  NEGATIVE LINE Part Type RH137H RH137K  RH1185A  SWITCHING RE Part Type	40V, 0.5A Positive Adjustable Regulator  40V, 0.9A Adjustable, Single Resistor LDO Regulator  20V, 1A Rugged, Low Noise, Adjustable LDO Regulator with Shutdown  25V, 1.5A Positive Adjustable Voltage LDO Regulator  40V, 1.5A Positive Adjustable Regulator  18V, 2.8A Adjustable, Single Resistor LDO Regulator  30V, 3A Positive Adjustable Voltage LDO Regulator  25V, 5A Positive Adjustable Voltage LDO Regulator  25V, 5A Positive Adjustable Voltage LDO Regulator  25V, 5A Positive Adjustable Voltage Regulator  30V, 0.5A Negative Adjustable Voltage Regulator  30V, 1.5A Negative Adjustable Voltage Regulator  35V, 3A Negative LDO with Adjustable Current Limit	0.5 0.9 1.5 1.5 2.8 3.0 5.0  lout (A) 0.5 1.5 3.0	DICE, TO-39 DICE  DICE DICE, TO3  DICE, TO3  DICE, TO3  DICE  DICE, TO3  DICE  Package DICE, TO-39 DICE, TO3  DICE, TO3	MSK5976, MSK5977, MSK5978, VRG8666, Dual Regulators: MSK5953, VRG8667, VRG8668  MSK5965  MSK5965  MSK5970, VRG8662, Dual Regulators: VRG8657, VRG8658, Positive + Negative Regulators: VRG8651, VRG86652, VRG86607, VRG86608, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5911, MSK5912, MSK5914, MSK5915, MSK5916, MSK5917, MSK5918, MSK5918, MSK5984, MSK5986, MSK5986, VRG8669, VRG8669, VRG8697, VRG8698, MSK5931, MSK5931, MSK5931, MSK5931, MSK5933, MSK5934, MSK5935, MSK5936, MSK5937, MSK5931, MSK5939, MSK5938, MSK5938, MSK5939, VRG8664, Dual Regulators: VRG8688, Positive + Negative Regulators: VRG8661, Dual Regulators: VRG8688, Positive + Negative Regulators: MSK5911, MSK5912, MSK5913, MSK5914, MSK5915, MSK5916, MSK5917, MSK5917, MSK5917, MSK5918, MSK5919, VRG8601, VRG8602, VRG8603, VRG8603, VRG8603, VRG8603, VRG8603, VRG8603, VRG8603, MSK5931, MSK5915, MSK5915, MSK5916, MSK5917, MSK5918, MSK5919, VRG8601, VRG8602, MSK5931, MSK5932, MSK5933, VRG8664  Partner Products

Partner Products:

MSK Prefix - ANAREN INC. (MS KENNEDY CORP.), www.mskennedy.com

VRG Prefix - COBHAM plc (AEROFLEX MICROELECTRONIC SOLUTIONS), www.aeroflex.com/ams

