

DESCRIPTION

AMCOM's AM048MX-89-R is part of SOT-89 Series of GaAs MESFETs. This part has a total gate width of 4.8 mm. The AM048MX-89-R is designed for high power microwave applications, operating up to 5 GHz.

The SOT-89 series is in a plastic package with all leads in the same plane for surface mount. The bottom of the package serves simultaneously as DC ground, RF ground and thermal path. This FET is RoHS Compliant.

FEATURES

- High Frequency Applications up to 5 GHz
- High Gain and High Power,
P1dB = 32dBm @3.5GHz (typ)
- Plastic Package for Low Cost

APPLICATIONS

- Wireless Local Loop Network
- PCS Base Stations
- WLAN, Repeaters

ABSOLUTE MAXIMUM RATING

Parameters	Symbol	Rating
Drain-Source Voltage	V _{DS}	8V
Gate-Source Voltage	V _{GS}	-5V
Drain Current	I _{DS}	1490mA
Continuous Dissipation	PT	10W
Channel Temperature	T _{CH}	175°C

PERFORMANCE AT 3.5 GHz (TA = 25°C)

Parameters	V _{ds} = 7.0V	I _{ds} = 375mA	V _{ds} = 5.0 V	I _{ds} = 560mA
	Minimum	Typical	Minimum	Typical
P1dB	31dBm	32dBm	30dBm	31dBm
Eff @ P1dB	38%	42%	38%	42%
Gain (small signal)	10dB	11dB	10dB	11dB
IP3	42dBm	43dBm	40dBm	41dBm

Note 1: Gain and output power are measured when the bottom of the FET is soldered to a metal ground. When the FET is mounted on the PC board with via hole to the metal ground, the actual gain may decrease by about 0.5 dB depending on the via hole inductance to the metal ground and on the operating frequency

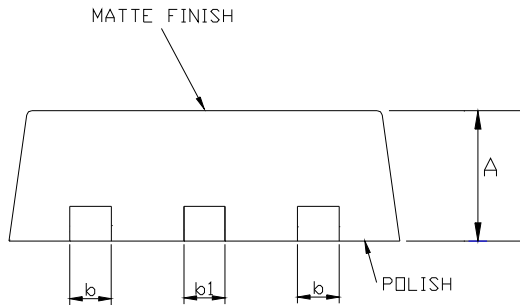
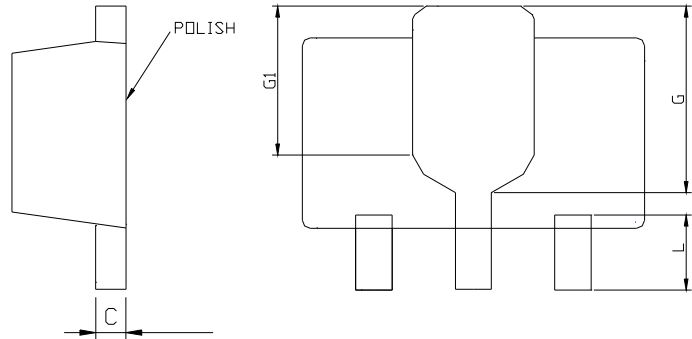
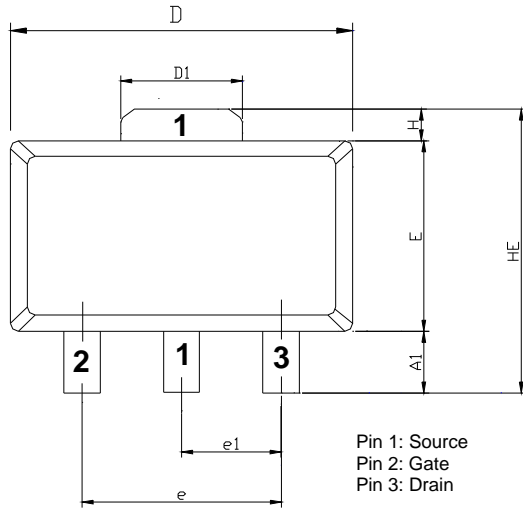
DC PARAMETERS

Parameter	Test Conditions	MIN	TYP	MAX
Saturation Current (I _{dss}) mA	V _{ds} = 3V V _{gs} = 0	800	1150	1490
Pinch-Off Voltage (V _P) Volt	V _{ds} = 3V I _{ds} = 2.5% I _{dss}	-2.6	-2.0	-1.2
Drain-to-Gate Breakdown Voltage (V _{bgd}) Volt	I _{dg} = 1mA/mm	11	15	
Thermal Resistance °C/Watt			16.9	

S-Parameters for TYPICAL AM048MX-89-R @ 5V / 375mA

Freq (MHz)	S11		S21		S12		S22	
	MAG	ANG	MAG	ANG	MAG	ANG	MAG	ANG
800	0.893	-157.633	5.731	89.277	0.029	16.234	0.632	176.273
908	0.895	-163.219	5.096	85.359	0.029	14.577	0.636	174.484
1016	0.892	-168.188	4.591	81.770	0.029	13.184	0.640	172.852
1502	0.903	175.461	3.146	66.996	0.030	8.235	0.645	164.484
2015	0.896	164.164	2.342	54.807	0.031	5.630	0.668	157.648
2501	0.903	154.750	1.915	43.980	0.032	3.215	0.666	152.805
3014	0.903	144.258	1.609	32.031	0.033	-0.666	0.667	145.766
3095	0.905	142.406	1.566	30.125	0.033	-1.279	0.666	144.773
3203	0.906	140.219	1.516	27.785	0.034	-1.973	0.668	143.648
3311	0.908	137.969	1.467	25.267	0.034	-3.123	0.671	142.188
3392	0.909	136.516	1.434	23.566	0.034	-3.753	0.672	141.180
3500	0.909	134.484	1.392	21.148	0.034	-4.559	0.675	139.992
3608	0.912	132.602	1.353	18.833	0.034	-5.517	0.674	138.664
3689	0.912	131.102	1.325	17.048	0.034	-6.316	0.672	137.781
3797	0.919	129.219	1.292	14.631	0.034	-7.294	0.664	136.063
3905	0.926	126.906	1.262	12.225	0.034	-8.107	0.655	134.906
4013	0.929	123.766	1.232	9.557	0.034	-9.344	0.650	133.984
4094	0.911	121.262	1.209	7.649	0.034	-9.979	0.659	133.156
4202	0.888	120.207	1.185	5.165	0.034	-10.304	0.677	129.875
4310	0.887	118.883	1.161	2.527	0.035	-10.928	0.682	126.414
4391	0.891	117.590	1.143	0.367	0.035	-11.833	0.682	124.211
4499	0.895	115.273	1.116	-2.495	0.036	-13.161	0.687	121.410
4607	0.900	112.871	1.088	-5.302	0.036	-15.141	0.693	119.172
4715	0.901	109.910	1.057	-8.250	0.036	-16.840	0.701	117.168
4796	0.903	107.824	1.035	-10.271	0.036	-17.787	0.705	115.836
4904	0.905	104.773	1.005	-13.023	0.035	-19.063	0.706	114.191
5012	0.904	101.988	0.979	-15.564	0.035	-19.537	0.710	113.344
5093	0.907	99.844	0.959	-17.544	0.036	-20.493	0.713	112.352
5201	0.908	97.113	0.933	-20.305	0.036	-22.334	0.713	110.973
5309	0.913	94.609	0.908	-22.885	0.036	-24.047	0.713	109.242
5390	0.916	92.770	0.891	-24.853	0.036	-25.298	0.711	107.965
5498	0.923	90.445	0.867	-27.450	0.036	-26.810	0.713	105.996
5606	0.928	88.195	0.844	-30.311	0.036	-28.753	0.710	103.297
5714	0.936	86.148	0.822	-33.094	0.036	-30.570	0.715	101.055
5795	0.941	84.469	0.805	-35.291	0.036	-32.270	0.719	98.574
5903	0.947	82.055	0.781	-38.299	0.035	-34.467	0.726	95.785
6011	0.951	79.816	0.755	-41.338	0.035	-36.705	0.734	92.504
6092	0.953	78.164	0.736	-43.498	0.035	-38.225	0.738	90.477
6200	0.955	75.941	0.712	-46.443	0.034	-40.395	0.752	87.664

FET PACKAGE



Symbols	Dimensions in Millimeters			Dimensions in Inches		
	MIN	NOM	MAX	MIN	NOM	MAX
A	1.40	1.50	1.60	0.055	0.059	0.063
A1	0.80	1.04		0.031	0.041	
b	0.36	0.42	0.48	0.014	0.016	0.018
b1	0.41	0.47	0.3	0.016	0.018	0.020
C	0.38	0.40	0.43	0.014	0.015	0.017
D	4.40	4.50	4.60	0.173	0.177	0.181
D1	1.40	1.60	1.75	0.055	0.062	0.069
HE			4.25			0.167
E	2.40	2.50	2.60	0.094	0.098	0.102
e	2.90	3.00	3.10	0.114	0.118	0.122
H	0.35	0.40	0.45	0.014	0.016	0.018
S	0.65	0.75	0.85	0.026	0.030	0.034
e1	1.40	1.50	1.60	0.054	0.059	0.063
G	2.10	2.50	2.90	0.083	0.098	0.114
G1	1.80	2.00	2.30	0.071	0.079	0.091
L	1.30	1.50	1.70	0.051	0.059	0.067