

Surface Mount Rectifier Diode



Features

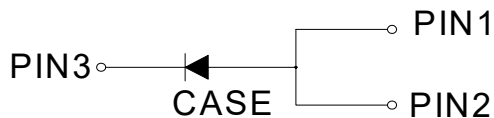
- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

Typical Applications

For use in general purpose rectification of power supplies, inverters, converters, and freewheeling diodes for consumer, and telecommunication.

Mechanical Data

- **Package:** TO-277
Molding compound meets UL 94 V-0 flammability rating, -compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Color band denotes the cathode end



■Maximum Ratings (T_j=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MG510M
Device marking code			MG510M
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	V	1000
Maximum RMS Voltage	V _{RMS}	V	700
Maximum DC blocking Voltage	V _{DC}	V	1000
Average Rectified Output Current @60Hz sine wave, Resistance load, T _c (FIG.1)	I _O	A	10
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T _j =25°C	I _{FSM}	A	230
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, T _j =25°C			460
Current squared time @1ms≤t≤8.3ms T _j =25°C	I ² t	A ² s	219
Typical Junction capacitance @4V, 1MHz	C _j	pF	54
Storage Temperature	T _{stg}	°C	-55 ~ +150
Junction Temperature	T _j	°C	-55 ~ +150

MG510M

■Electrical Characteristics (T_j=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Instantaneous forward voltage drop per diode	V _{FM}	V	T _j =25℃	I _{FM} =10A	-	0.98	1.20
			T _j =125℃		-	0.88	1.0
DC reverse current at rated DC blocking voltage per diode	I _{RRM1}	uA	T _j =25℃	V _{RM} =V _{RRM}	-	-	5
	I _{RRM2}		T _j =125℃		-	-	500

■Thermal Characteristics (T_j=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MG510M
Typical Thermal resistance	R _{θJA} ⁽¹⁾	℃/W	90
	R _{θJC} ⁽¹⁾		6

■ Ordering Information (Example)

PREFERRED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MG510M	F1	Approximate 0.0821	5000	/	80000	13" reel

■ Characteristics (Typical)

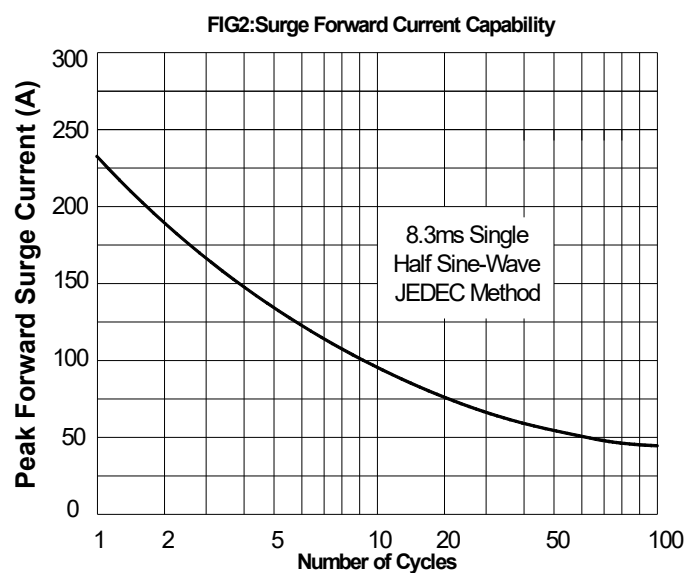
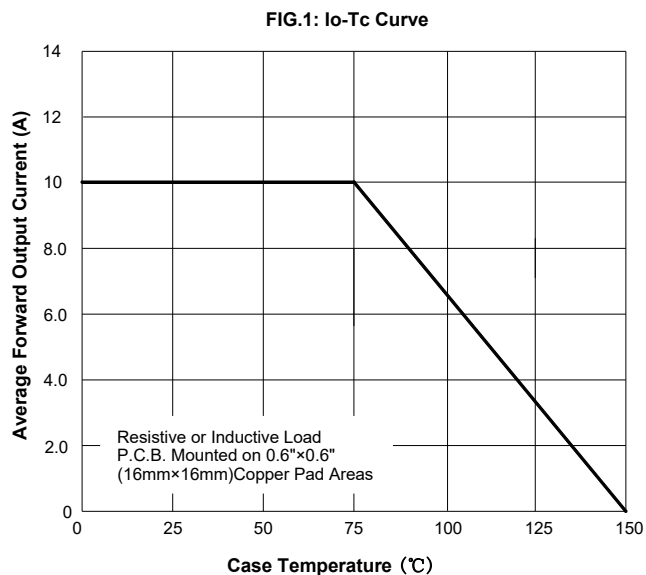


FIG.3: Typ.Forward Voltage

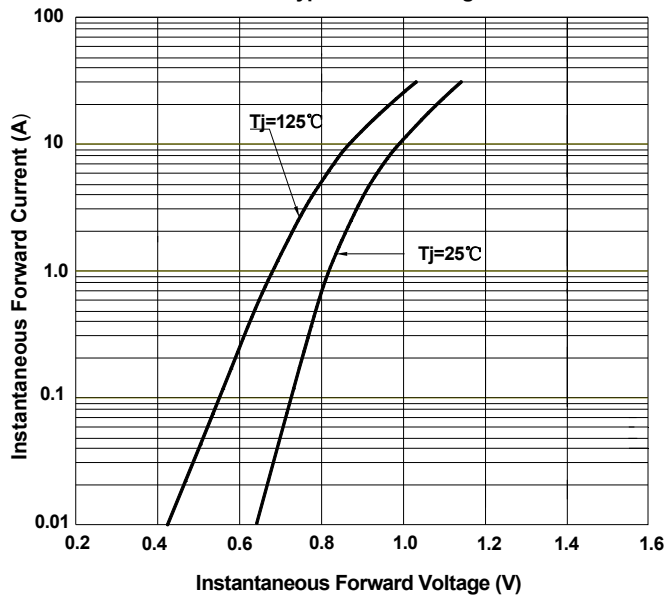
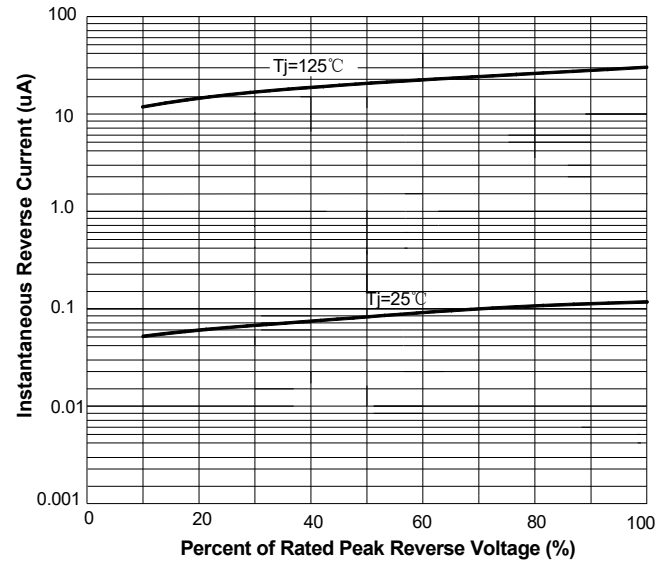
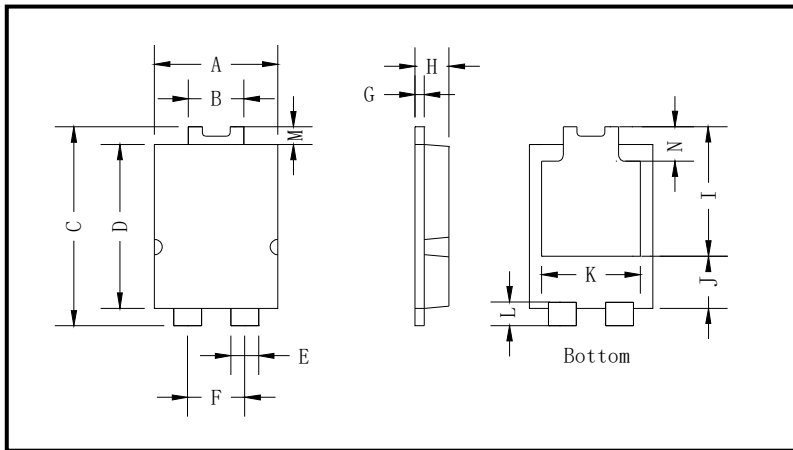


FIG.4: Typical Reverse Characteristics

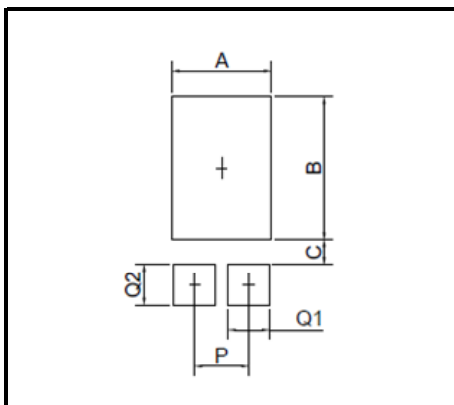


Outline Dimensions



DIM	mm	
	MIN.	MAX.
A	3.90	4.10
B	1.70	1.90
C	6.40	6.60
D	5.30	5.50
E	0.80	1.00
F	1.85 ref.	
G	0.35	0.45
H	1.10	1.20
I	4.10	4.50
J	1.50	1.90
K	2.90	3.40
L	0.55	0.75
M	0.50 ref.	
N	1.15 ref.	

Suggested pad layout



DIM	MIN.(mm)
A	3.36
B	4.86
C	0.85
P	1.84
Q1	1.40
Q2	1.40

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