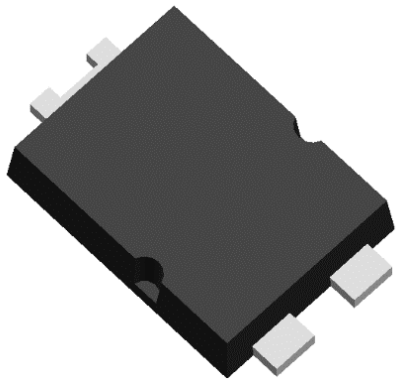
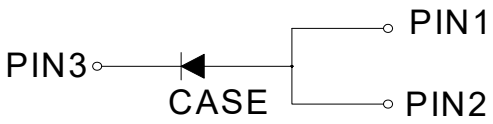
Surface Mount Rectifier Diode





Features

- Ultrafast reverse recovery time
- Low leakage current
- Low switching losses, high efficiency
- High forward surge capability
- Solder dip 260 °C max. 10 s, per JESD 22-B106

Typical Applications

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and telecommunication.

Mechanical Data

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

■Maximum Ratings (Tj=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MGS8M
Device marking code			MGS8M
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, Tc (FIG.1)	I_O	A	8.0
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave,1 cycle, Tj=25℃	I_{FSM}	A	230
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, Tj=25℃			460
Current squared time @1ms≤t≤8.3ms Tj=25℃	I^2t	A^2s	219
Typical Junction capacitance @4V,1MHz	Cj	pF	54
Storage Temperature	T_{stg}	℃	-55 ~ +150
Junction Temperature	Tj	℃	-55 ~ +150

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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Instantaneous forward voltage drop per diode	V_{FM}	V	Tj=25℃	I_{FM}=8.0A	-	0.94	1.10
			Tj=125℃		-	0.84	0.92
DC reverse current at rated DC blocking voltage per diode	I_{RRM1}	uA	Tj=25℃	$V_{RM}=V_{RRM}$	-	-	5
	I_{RRM2}		Tj=125℃		-	-	500
Reverse Recovery Time	T_{RR}	ns	Tj=25℃	I_F=0.5A,I_R=1.0A, I_{rr}=0.25A	-	4350	-

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

PARAMETER	SYMBOL	UNIT	MGS8M
Typical Thermal resistance	$R_{\theta J-A}$(1)	℃/W	95
	$R_{\theta J-C}$(1)		8

■ Ordering Information (Example)

PREFERED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MGS8M	F1	Approximate 0.0821	5000	/	80000	13” reel

■ Characteristics (Typical)

FIG.1: Io-Tc Curve

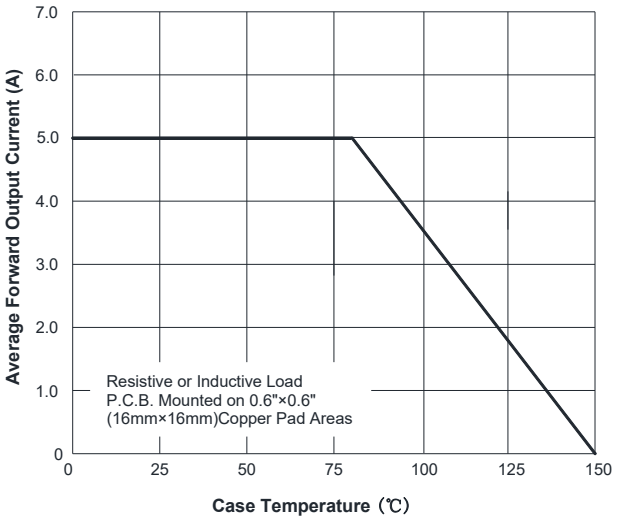


FIG2:Surge Forward Current Capability

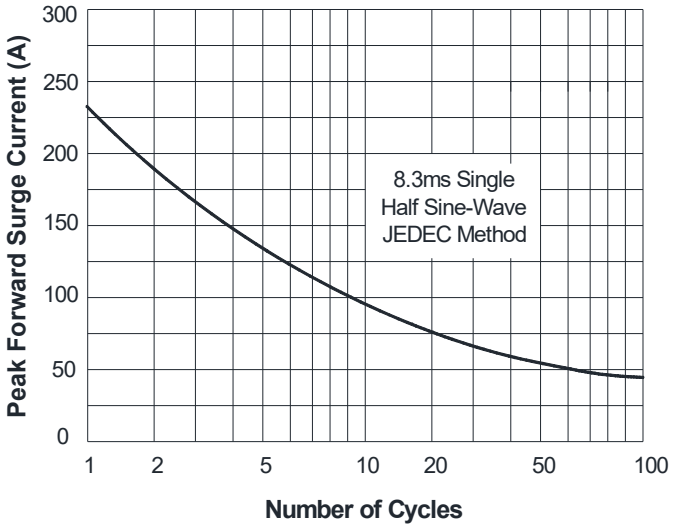


FIG.3: Forward Voltage

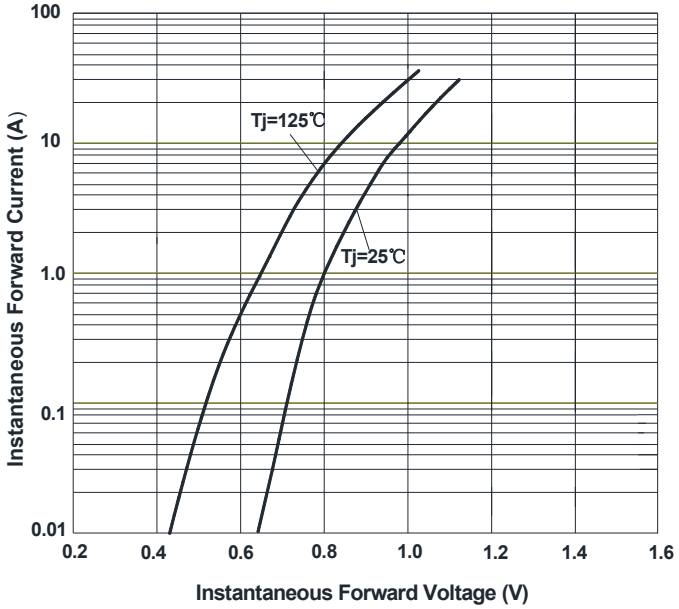
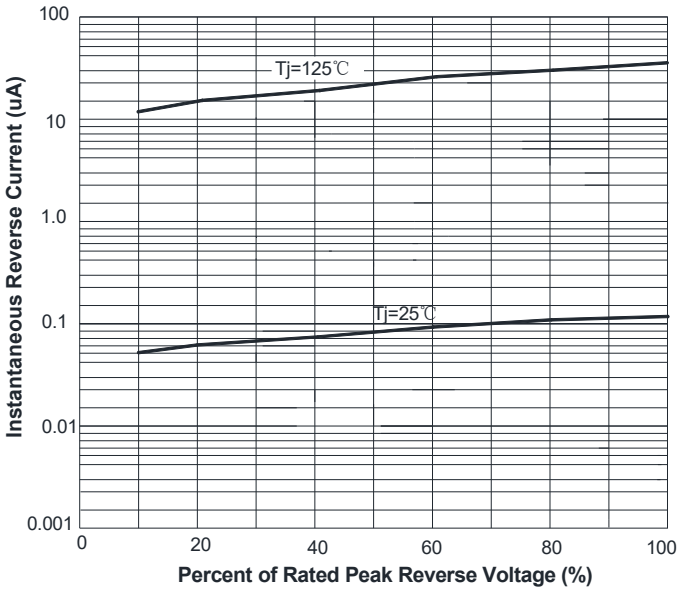
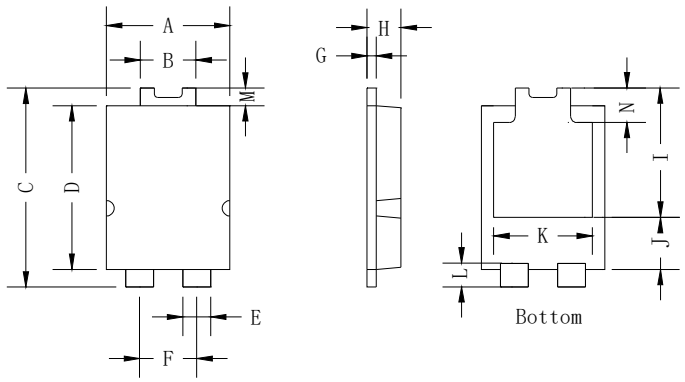


FIG.4: Typical Reverse Characteristics

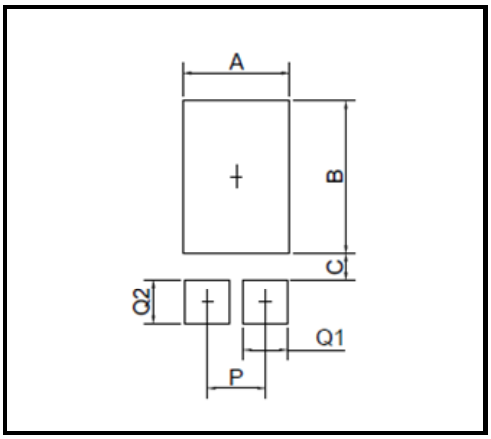


■ Outline Dimensions



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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