

**GLASS PASSIVATED
SURFACE MOUNT BRIDGE RECTIFIERS**

REVERSE VOLTAGE – 1000 Volts
FORWARD CURRENT – 3 Amperes

GENERAL DESCRIPTION

Suitable for AC-to-DC bridge full wave rectification for SMPS, LED lighting, Adapter, Battery charger, Home appliances, Office equipment, and Telecommunication application.

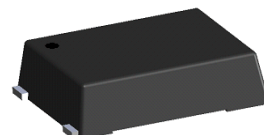
FEATURES

- Rated at 1000V PRV
- Compact, thin profile package design
- Ideal for SMT manufacturing
- Reliable robust construction
- Qualified according to AEC-Q101 Rev_C

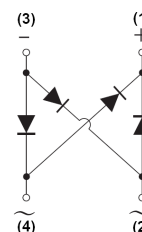
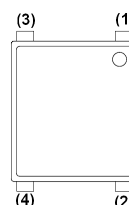
MECHANICAL DATA

- Case Material: "Green" Molding compound, UL flammability classification 94V-0, "Halogen-free".
- Polarity indicator: As marked on body
- Marking : MRS30M
- Weight: 216mg (Approximate)

M2



Pin Assignment



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

ABSOLUTE RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	1000	V
Maximum DC blocking voltage	V_{DC}	1000	V
Average rectified forward current	$I_{(AV)}$	3	A
Peak forward surge 8.3ms single half sine-wave	I_{FSM}	100	A
I^2t Rating for fusing (1ms<t<8.3ms)	I^2t	41.5	A ² S
Operating and Storage temperature range	T_J, T_{STG}	-55 ~ +150	°C

STATIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITION	SYMBOL	TYP	MAX	UNIT
Forward voltage (Note 1)	$I_F = 3A$ $T_J = 25^\circ C$ $T_J = 125^\circ C$	V_F	-- 0.99	1.3 --	V
Reverse leakage current	$V_R = 1000V$ $T_J = 25^\circ C$ $T_J = 125^\circ C$	I_R	-- 68	5 100	uA

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	TYP	UNIT
Typical thermal resistance (Note 3,4)	R_{thJC} R_{thJL} R_{thJA}	2 10 25	°C/W

DYNAMIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITION	SYMBOL	TYP	MAX	UNIT
Reverse recovery time	$I_F = 0.5A, I_{rr} = 0.25A, I_R = 1.0A$	T_{rr}	--	250	ns
Typical junction capacitance (Note 2)		C_J	45	--	pF

Note :

- (1) 300us pulse width , 2% duty cycle
- (2) Measured at 1.0MHz and applied reverse voltage of 4.0 V DC
- (3) Thermal Resistance test performed in accordance with JESD-51.
- (4) The unit mounted on Aluminum plate (120mm x 96 mm x 1.45 mm)

REV.-2, Jul-2020, KBCA01

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RATING AND CHARACTERISTIC CURVES
MRS30M



FIG.1- FORWARD CURRENT DERATING CURVE

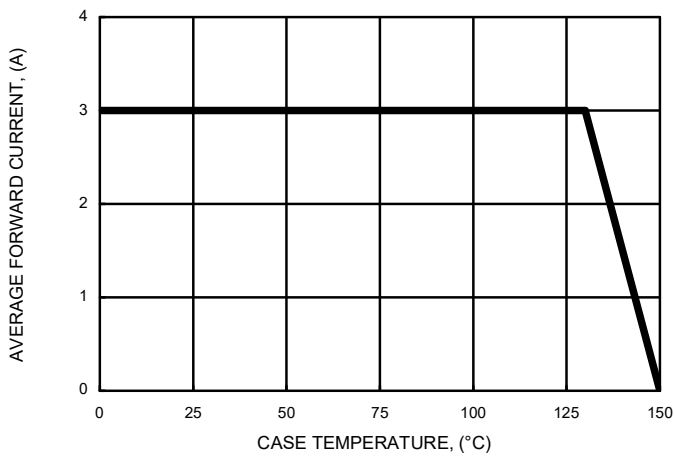


FIG.2- MAXIMUM NON-REPETITIVE SURGE
CURRENT

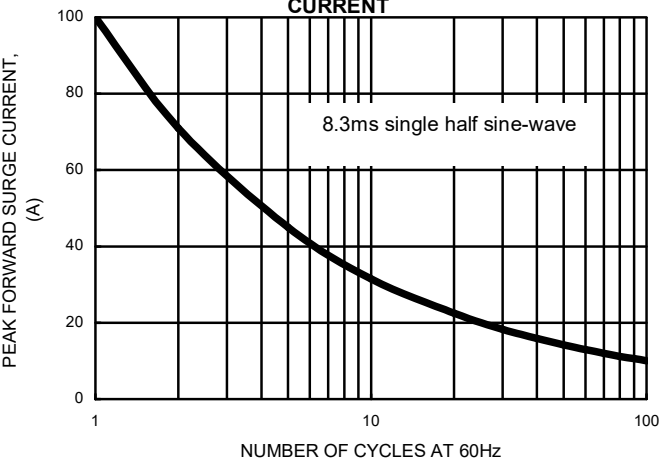


FIG.3- TYPICAL FORWARD CHARACTERISTICS

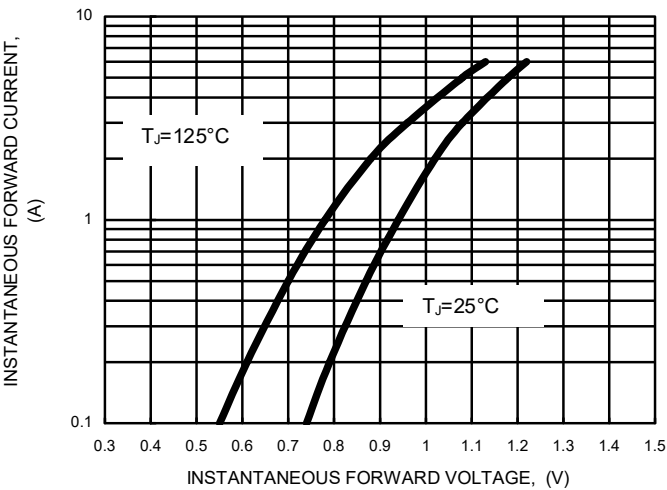


FIG.4- TYPICAL JUNCTION CAPACITANCE

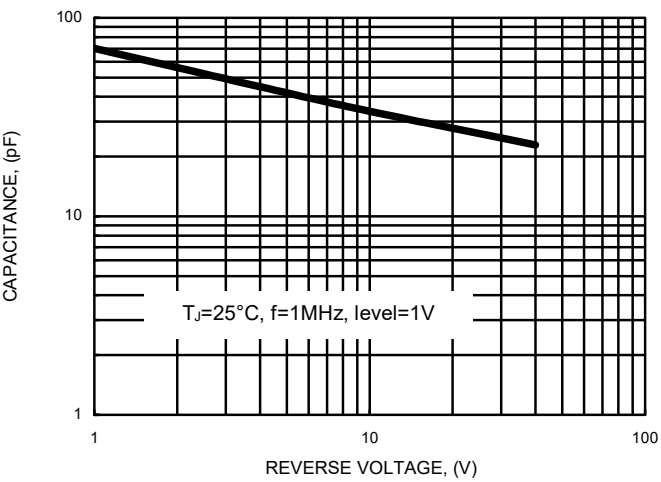
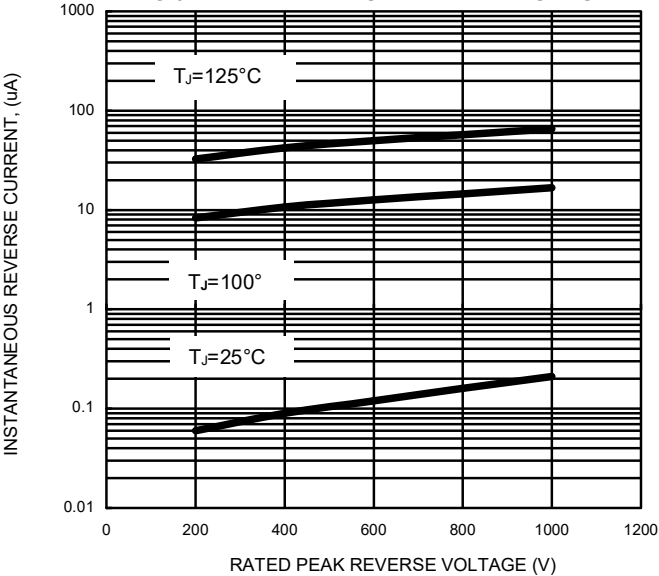
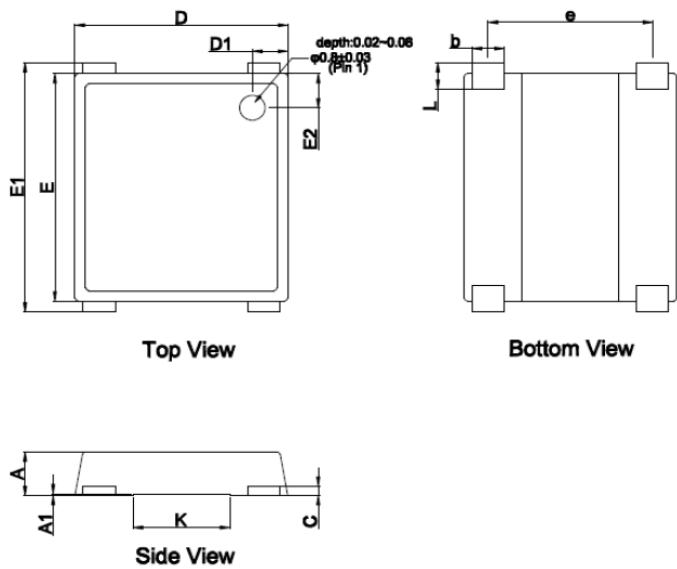


FIG.5- TYPICAL REVERSE CHARACTERISTICS



Package Dimension :



MSBL			
DIM.	MIN.	TYP.	MAX
A	1.30	1.40	1.50
A1	0.04	0.06	0.08
C	0.27	0.30	0.40
D	6.50	6.60	6.70
D1	0.95	1.10	1.25
E	7.20	7.30	7.40
E1	7.90	8.30	8.60
E2	0.95	1.10	1.25
L	0.80	1.00	1.05
b	0.95	1.00	1.15
e	5.00	5.10	5.20
k	2.90	3.00	3.10
All dimension in millimeter			

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