

1.0A Surface Mount General Purpose Rectifiers -1000V

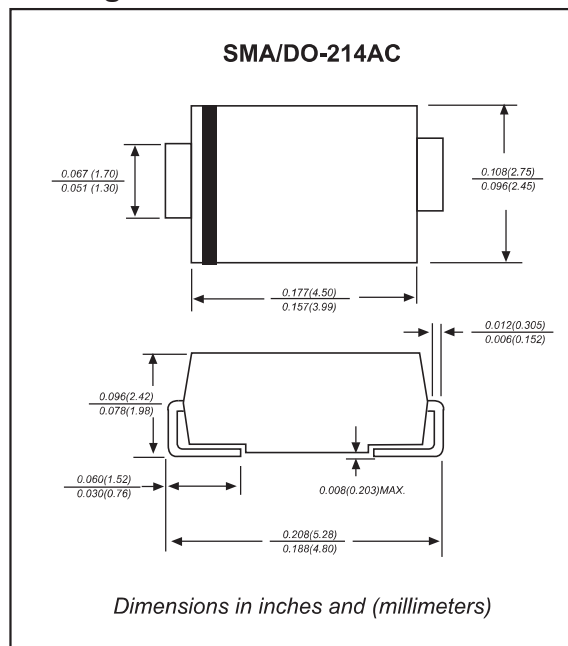
Features

- Batch process design, excellent power dissipation offers better reverse leakage current and thermal resistance
- Low profile surface mounted application in order to optimize board space
- High current capability
- High surge capability
- Glass passivated chip junction
- Lead free parts meet RoHS requirements

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SMA/DO-214AC
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any

Package outline



Maximum ratings (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	GN1M	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	1000	V
Maximum RMS voltage	V_{RMS}	700	V
Maximum continuous reverse voltage	V_R	1000	V
Maximum average forward rectified current	I_O	1.0	A
Non-repetitive peak forward surge current 8.3ms single half sine-wave (JEDEC methode)	I_{FSM}	50	A
Typical junction capacitance, Note1	C_J	30	pF
Operating junction temperature range	T_J	-55 to +150	$^\circ\text{C}$
Storage temperature range	T_{STG}	-65 to +175	$^\circ\text{C}$

Electrical characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	GN1M	UNIT
Maximum instantaneous forward voltage at $I_F=1.0\text{A}$	V_F	1.10	V
Maximum reverse leakage current at rated V_R $T_J=25^\circ\text{C}$ $T_J=125^\circ\text{C}$	I_R	5.0 50	μA μA

Thermal characteristics

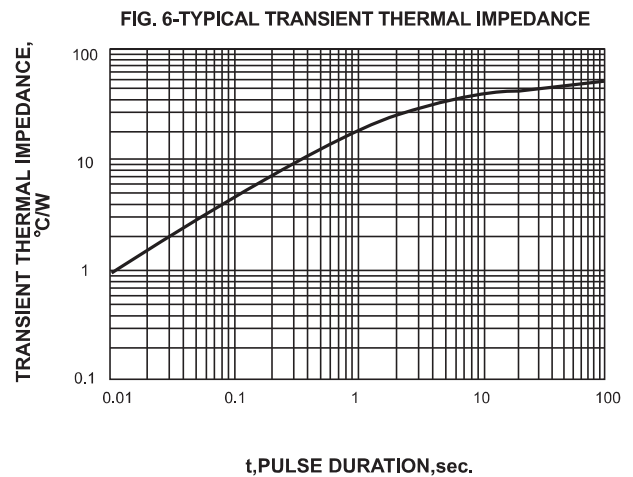
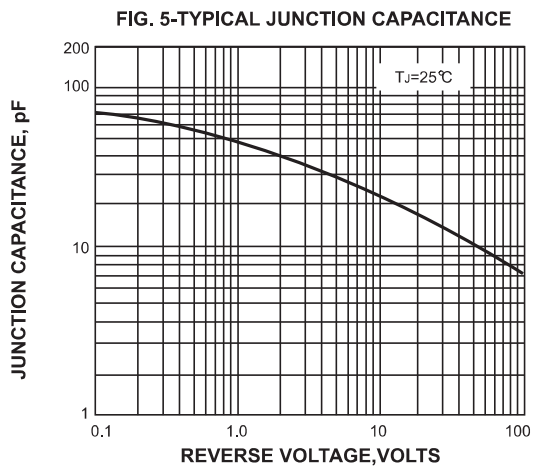
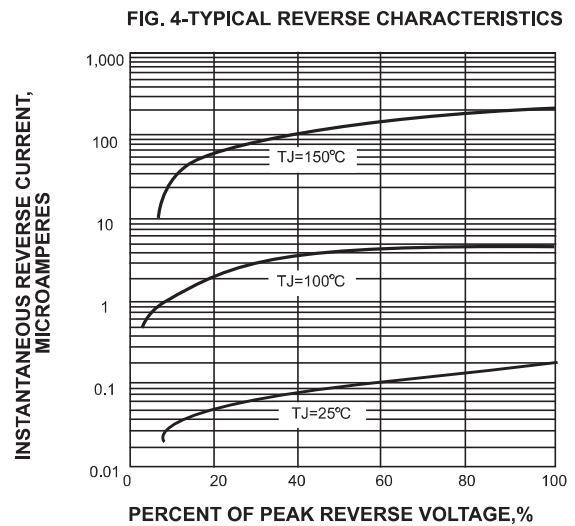
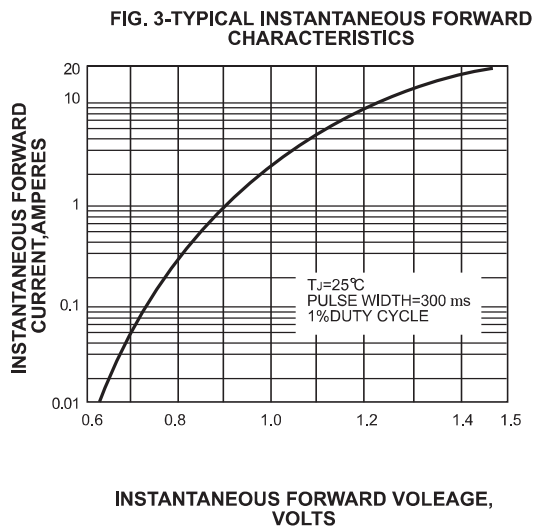
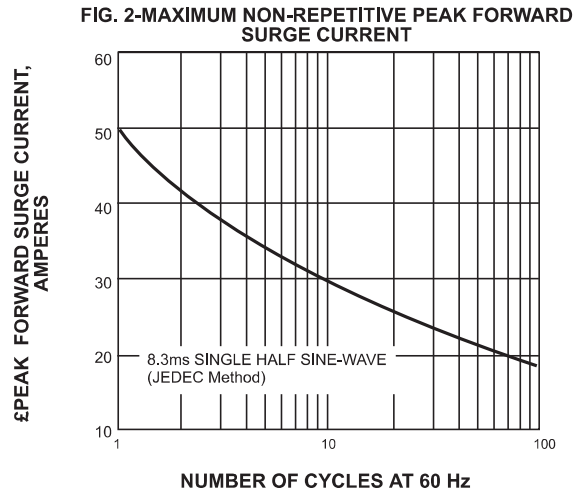
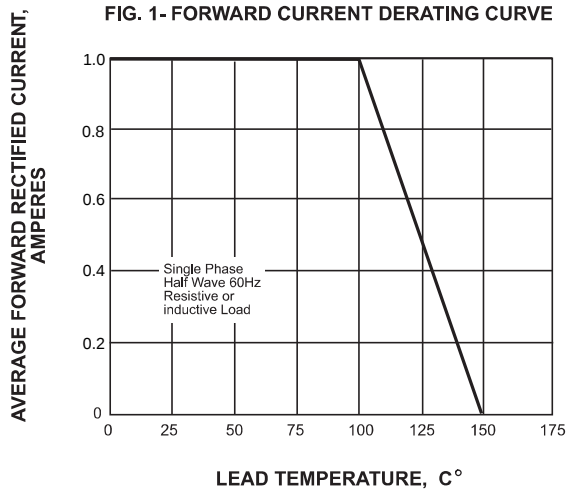
PARAMETER	SYMBOLS	GN1M	UNIT
Typical thermal resistance junction to ambient, Note2	$R_{\theta JA}$	48	$^\circ\text{C/W}$
Typical thermal resistance junction to case, Note2	$R_{\theta JC}$	26	$^\circ\text{C/W}$

Notes 1: Measured at 1MHz and applied reverse voltage of 4.0V D.C

2: Mounted on FR-4 PCB copper, minimum recommended pad layout

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Rating and characteristic curves



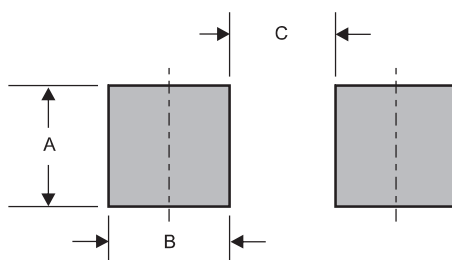
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
GN1M	R17

Suggested solder pad layout

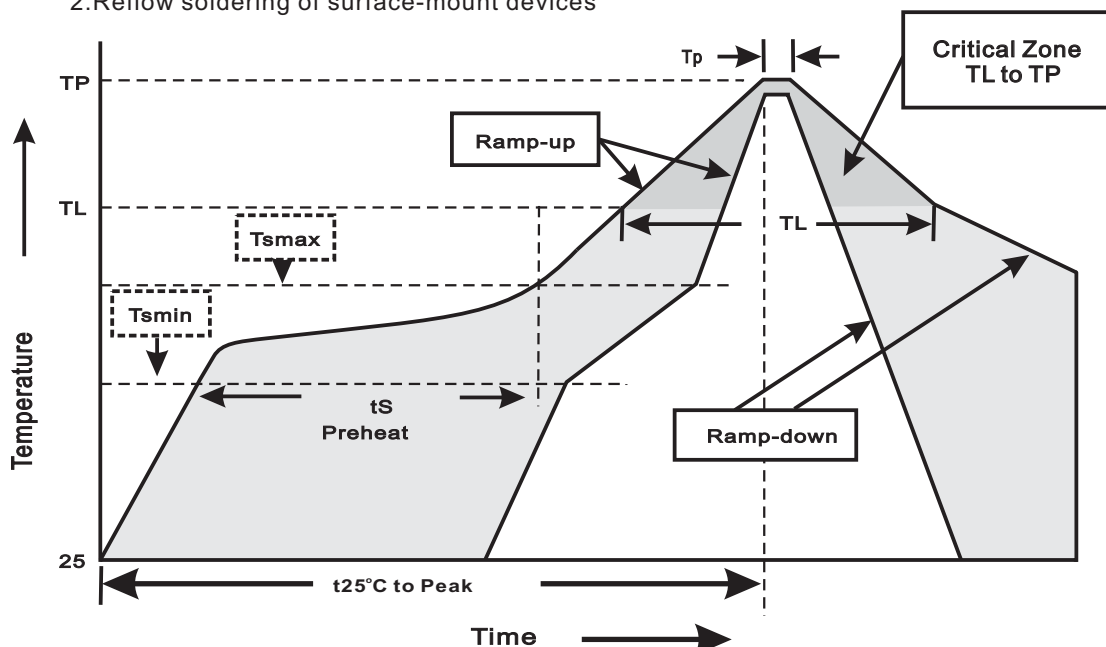


Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SMA	0.110 (2.80)	0.063 (1.60)	0.087 (2.20)

Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T_L to T_P)	$<3^{\circ}\text{C}/\text{sec}$
Preheat -Temperature Min(T_{min}) -Temperature Max(T_{max}) -Time(min to max)(t_s)	150°C 200°C $60\sim 120\text{sec}$
T_{max} to T_L -Ramp-upRate	$<3^{\circ}\text{C}/\text{sec}$
Time maintained above: -Temperature(T_L) -Time(t_L)	217°C $60\sim 260\text{sec}$
Peak Temperature(T_P)	$255^{\circ}\text{C}-0/+5^{\circ}\text{C}$
Time within 5°C of actual Peak Temperature(t_P)	$10\sim 30\text{sec}$
Ramp-down Rate	$<6^{\circ}\text{C}/\text{sec}$
Time 25°C to Peak Temperature	$<6\text{minutes}$