

Surface Mount Rectifier



Features:

- Low Profile Package
- For Surface Mounted Applications
- Built-In Strain Relief, Ideal for Automated Placement
- High Temperature Soldering : 250°C/10 seconds at Terminals
- Easy Pick and Place
- Ultrafast Recovery Times for High Efficiency
- Low Forward Voltage, Low Power Loss

Mechanical Data

- Case : JEDEC DO-214AA, molded plastic over passivated chip
- Terminals : solder plated, solderable per MIL-STD-750, method 2026
- Polarity : Colour band denotes cathode end
- Weight : 0.002oz, 0.064g

Maximum Ratings and Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified

Characteristic	Symbol	US1J-13-F	US1K-13-F	US1M-13-F	Units
Maximum repetitive peak reverse voltage	V_{RRM}	600	800	1,000	V
Maximum RMS voltage	V_{RWS}	420	560	700	V
Maximum DC blocking voltage	V_{DC}	600	800	1,000	V
Maximum average forward rectified current at $T_L=110^\circ\text{C}$	$I_{F(AV)}$	1			A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	30			A
Maximum instantaneous forward voltage at 1A	V_F	1.7			V
Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=125^\circ\text{C}$	I_R	5 100			μA
Maximum reverse recovery time at $I_F=0.5\text{A}$ $I_R=1\text{A}$ $I_{rr}=0.25\text{A}$	t_{rr}	75			ns
Typical junction capacitance at 4V,1MHz	C_J	15			pF
Maximum thermal resistance (Note1)	$R_{\theta JA}$ $R_{\theta JL}$	55 20			$^\circ\text{C/W}$
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150			$^\circ\text{C}$

Note:

(1) PCB mounted on 0.2" x 0.2" (5 x 5mm²) copper pad areas

FIG.1 – FORWARD CURRENT DERATING CURVE

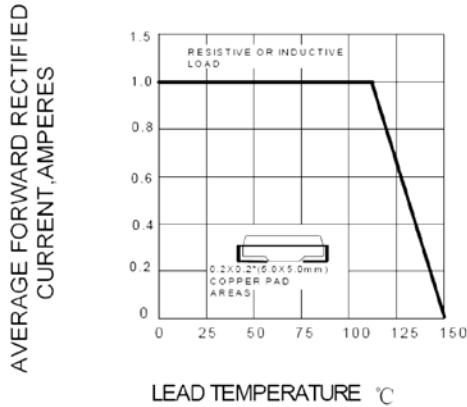


FIG.2 – MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

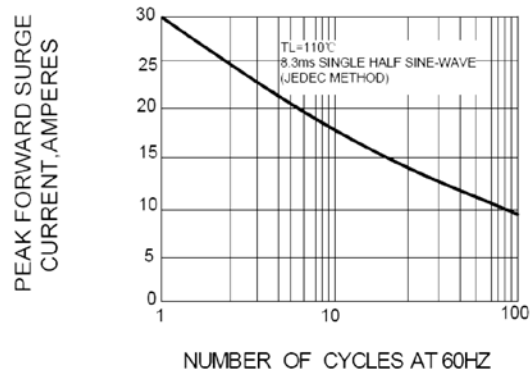


FIG.3 – TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

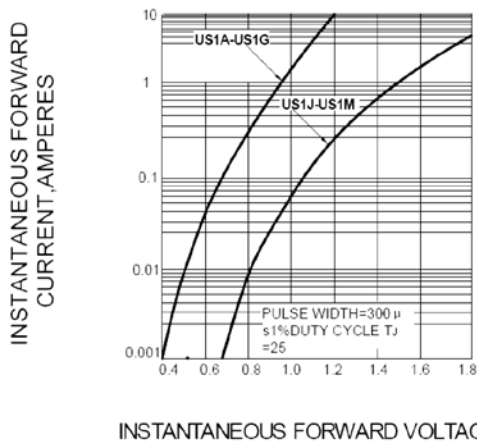


FIG.4 – TYPICAL REVERSE CHARACTERISTICS

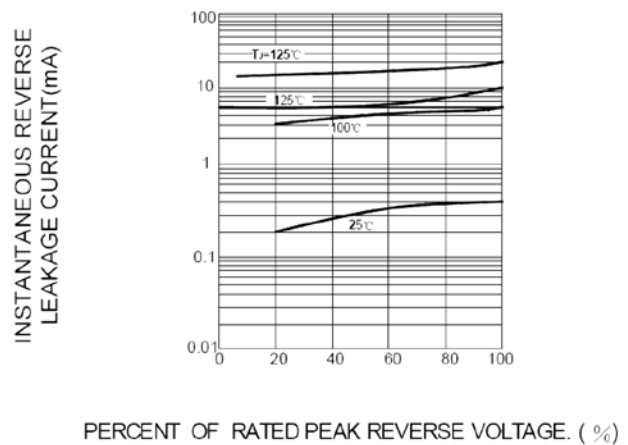


FIG.5 – TYPICAL JUNCTION CAPACITANCE

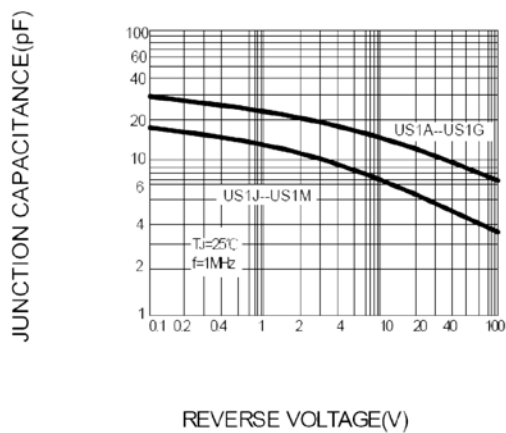
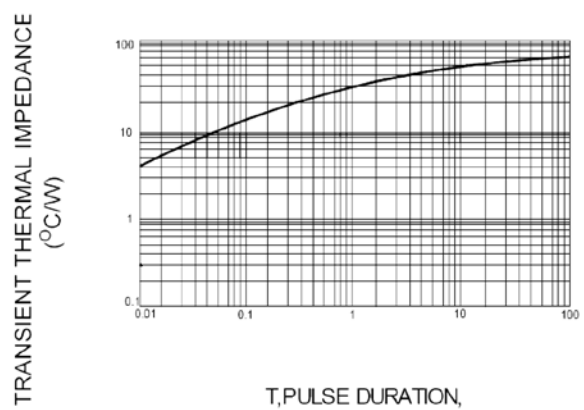


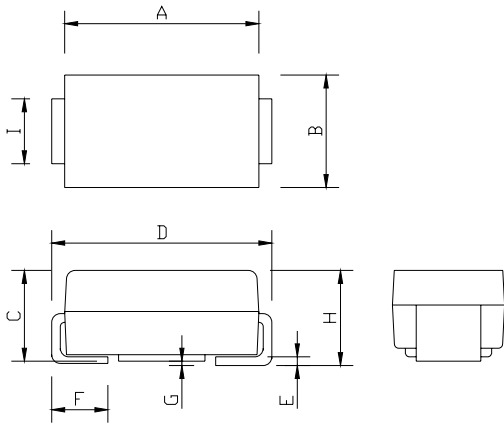
FIG.6 – TYPICAL TRANSIENT THERMAL IMPEDANCE



Surface Mount Rectifier



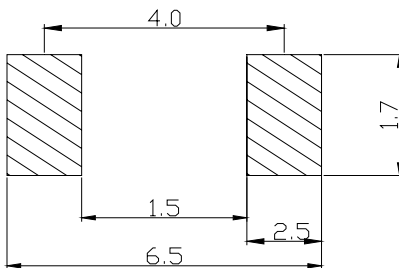
Package Outline Dimensions



DO-214AC(SMA)		
Dim.	Min.	Max.
A	4.25	4.65
B	2.4	2.8
C	1.85	2.15
D	4.85	5.35
E	0.2 Typ.	
F	0.9	1.5
G	0.2 Max.	
H	1.9	2.3
I	1.35	1.65

Dimensions : Millimetres

Soldering Footprint



Dimensions : Millimetres

Package Information

Device	Package	Shipping
US1J-13-F US1K-13-F US1M-13-F	DO-214AC(SMA)	5,000 / Tape & Reel

Part Number Table

Description	Part Number
Surface Mount Rectifier	US1J-13-F
	US1K-13-F
	US1M-13-F

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