

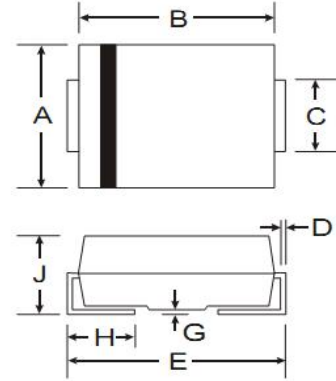
## SURFACE MOUNT ULTRA FAST RECTIFIER

Reverse Voltage - 50 to 600 Volts

Forward Current - 1.0 Amperes



Dimensions



### FEATURES

- Ultra fast switching for high efficiency
- Glass passivated chip junction
- For surface mounted applications
- Low reverse leakage
- Built-in strain relief, ideal for automated placement
- High forward surge current capability
- High temperature soldering guaranteed:  
260°C/10 seconds at terminals
- The plastic package carries Underwriters Laboratory  
Flammability Classification 94V-0

### MECHANICAL DATA

- **Case:** JEDEC DO-214AC (SMA)molded plastic
- **body Terminals:** leads solderable per MIL-STD-750, Method 2026
- **Polarity:** Color band denotes cathode end
- **Mounting Position:** Any
- **Weight :** 0.002 ounce, 0.07 grams

SMA		
Dim	min	max
A	2.29	2.92
B	4.00	4.60
C	1.27	1.63
D	0.15	0.31
E	4.80	5.59
G	0.050	0.203
H	0.76	1.52
J	2.01	2.30
All dimenslons in mm		

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

	SYMBOLS	ES1A	ES1B	ES1C	ES1D	ES1E	ES1G	ES1k	UNITS
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	150	200	300	400	800	VOLTS
Maximum RMS voltage	$V_{RMS}$	35	70	105	140	210	280	490	VOLTS
Maximum DC blocking voltage	$V_{DC}$	50	100	150	200	300	400	800	VOLTS
Maximum average forward rectified current at $T_L=90_C$	$I_{(AV)}$	1.0							Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	30.0							Amps
Maximum instantaneous forward voltage at 1.0A	$V_F$	0.95				1.25	1.85		Volts
Maximum DC reverse current at rated DC blocking voltage	$I_R$	5.0				50.0			$\mu A$
Maximum reverse recovery time (NOTE 1)	$t_{rr}$	35							ns
Typical junction capacitance (NOTE 2)	$C_J$	15.0							pF
Typical thermal resistance (NOTE 3)	$R_{\theta JA}$	60.0							$^{\circ}C/W$
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150							$^{\circ}C$

**Note:** 1.Reverse recovery condition  $I_F=0.5A, I_R=1.0A, I_{rr}=0.25A$

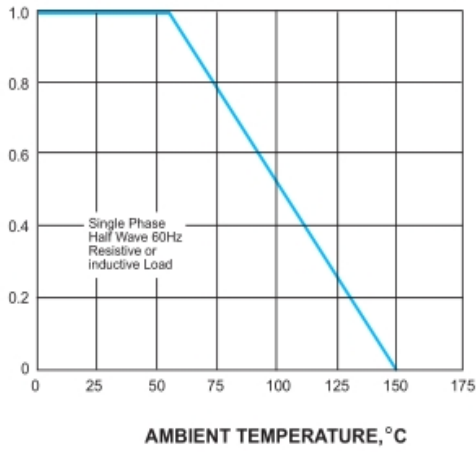
2.Measured at 1MHz and applied reverse voltage of 4.0V D.C.

3.P.C.B. mounted with 0.2x0.2"(5.0x5.0mm) copper pad areas

## RATINGS AND CHARACTERISTIC CURVES

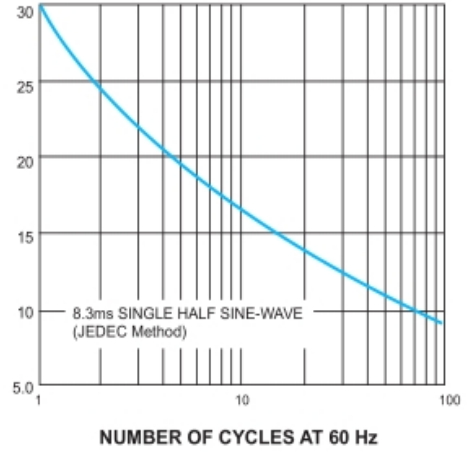
AVERAGE FORWARD RECTIFIED CURRENT, AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



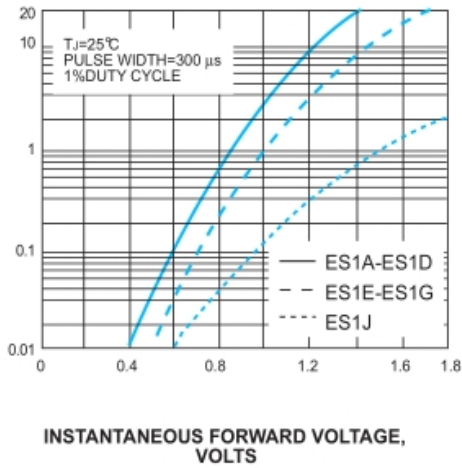
PEAK FORWARD SURGE CURRENT, AMPERES

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



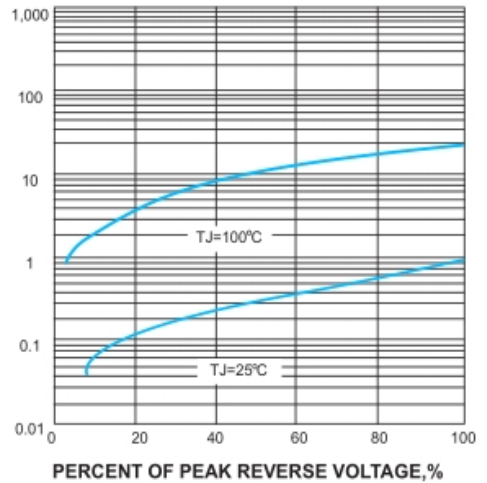
INSTANTANEOUS FORWARD CURRENT, AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



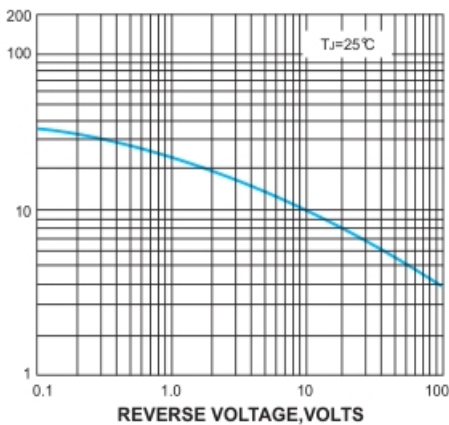
INSTANTANEOUS REVERSE CURRENT, MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



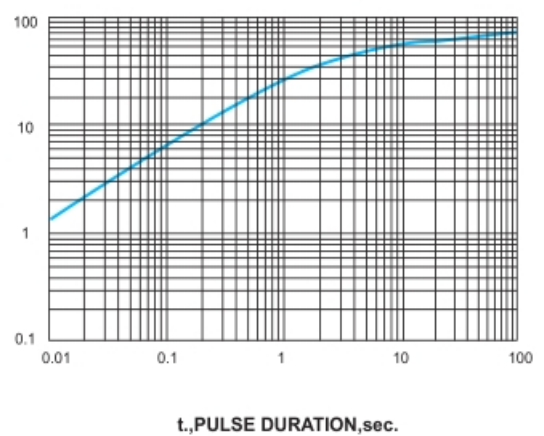
JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE



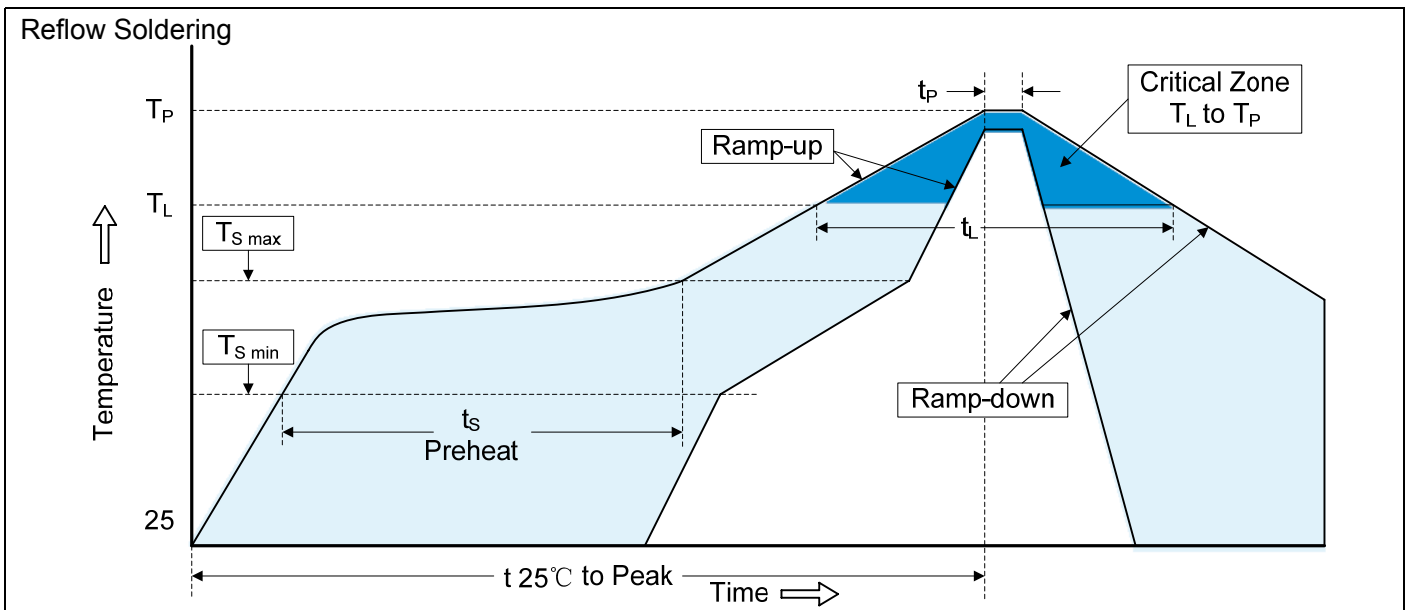
TRANSIENT THERMAL IMPEDANCE,  $^\circ\text{C}/\text{W}$

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



$t$ , PULSE DURATION, sec.

## Recommended Soldering Conditions

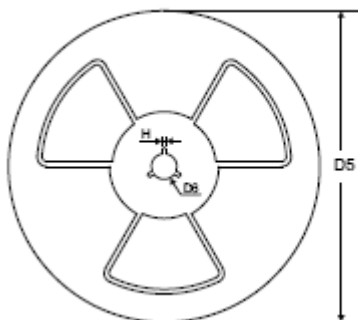


### Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate ( $T_L$ to $T_P$ )	3°C/second max.
Preheat	
-Temperature Min ( $T_{S\ min}$ )	150°C
-Temperature Max ( $T_{S\ max}$ )	200°C
-Time (min to max) ( $t_s$ )	60-180 seconds
$T_{S\ max}$ to $T_L$	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature ( $T_L$ )	217°C
-Time ( $t_L$ )	60-150 seconds
Peak Temperature ( $T_P$ )	260°C
Time within 5°C of actual Peak Temperature ( $t_p$ )	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

### Packaging

13" Reel



D5  $\Phi 330.0 \pm 2.0$

D6  $\Phi 13.5 \pm 0.5$

H  $2.5 \pm 1.0$

W2  $16.0 \pm 2.0$

Quantity: 5000PCS