



# ES5AC-ES5JC

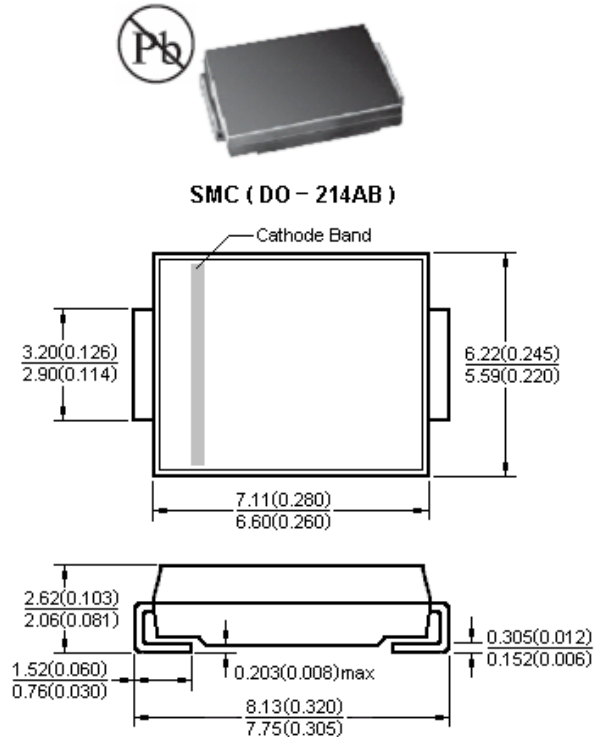
## Surface Mount Superfast Rectifiers

### Features

- Glass passivated chip junctions
- Ideal for automated placement
- Ultrafast reverse recovery time for high efficiency
- Low profile package
- High forward surge capability
- High temperature soldering: 260°C/10 seconds at terminals
- Component in accordance to RoHS 2002/95/1 and WEEE 2002/96/EC

### Mechanical Date

- **Case:** JEDEC DO-214AB molded plastic body over passivated chip
- **Terminals:** Solder plated, solderable per J-STD-002B and JESD22-B102D
- **Polarity:** Laser band denotes cathode end



Dimensions in millimeters and (inches)

### Maximum Ratings and Electrical Characteristics Rating at 25 °C

ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%

Type Number	Symbol	ES 5AC	ES 5BC	ES 5CC	ES 5DC	ES 5FC	ES 5GC	ES 5HC	ES 5JC	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	150	200	300	400	500	600	V
Maximum RMS Voltage	$V_{RMS}$	35	70	105	140	210	280	350	420	V
Maximum DC Blocking Voltage	$V_{DC}$	50	100	150	200	300	400	500	600	V
Maximum Average Forward Rectified Current See Fig. 1	$I_{(AV)}$	5.0								A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) @ $T_J = 100^\circ\text{C}$	$I_{FSM}$	150								A
Maximum Instantaneous Forward Voltage @ 5.0A	$V_F$	1.0			1.25		1.65			V
Maximum DC Reverse Current @ $T_A = 25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_A = 100^\circ\text{C}$	$I_R$	10				500				$\mu\text{A}$
Maximum Reverse Recovery Time ( Note 1 )	$T_{rr}$	35								nS
Typical Junction Capacitance ( Note 2 )	$C_j$	45				30				pF
Typical Thermal Resistance (Note 3)	$R_{\theta JA}$ $R_{\theta JL}$	47				12				$^\circ\text{C}/\text{W}$
Operating Temperature Range	$T_J$	-55 to +150								$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150								$^\circ\text{C}$

- Notes:
1. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$
  2. Measured at 1 MHz and Applied  $V_R=4.0$  Volts
  3. Units Mounted on P.C.B. with 0.6" x 0.6"(16mm x 16mm) Copper Pad Areas



### Characteristic Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

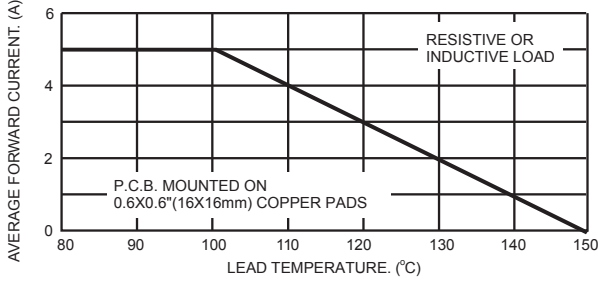


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

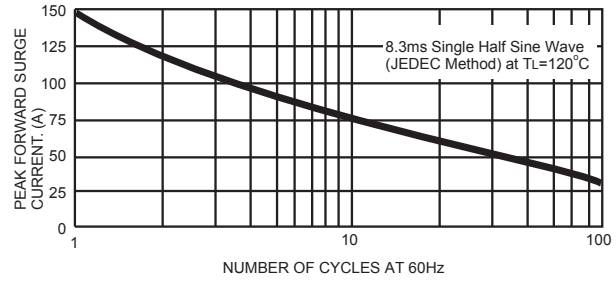


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

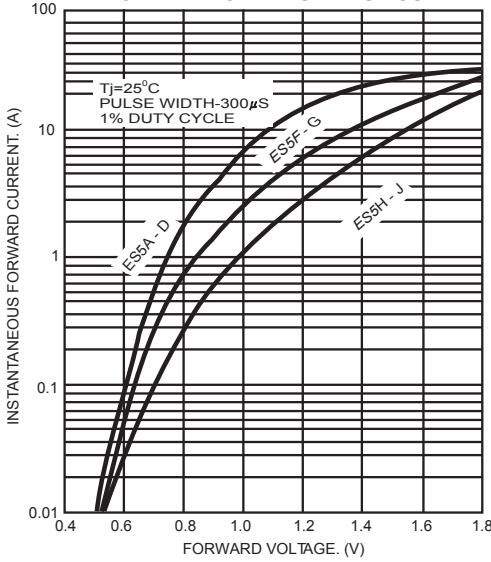


FIG.4- TYPICAL REVERSE CHARACTERISTICS

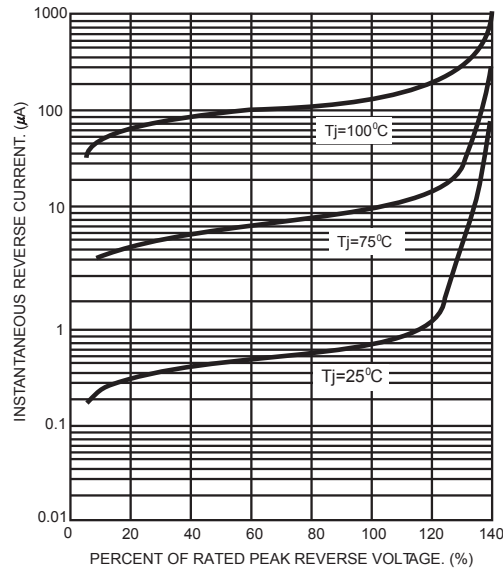


FIG.5- TYPICAL JUNCTION CAPACITANCE

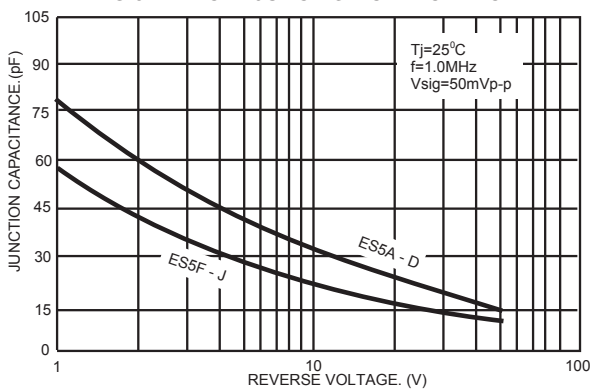


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE

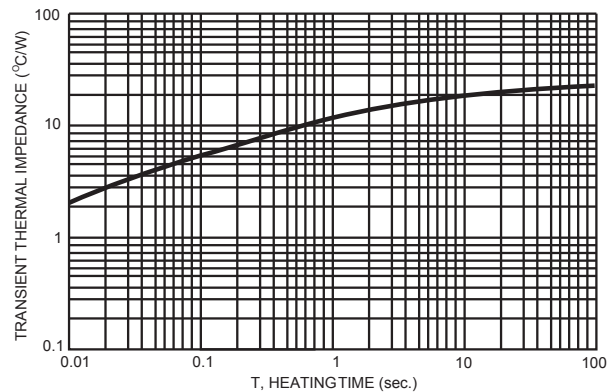
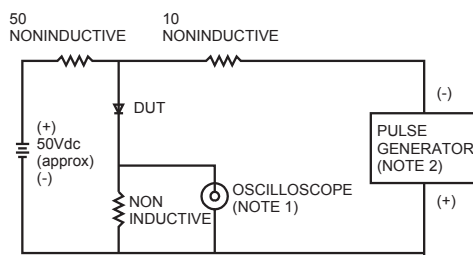


FIG.7- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time=7ns max. Input Impedance=1 megohm 22pf  
2. Rise Time=10ns max. Source Impedance=50 ohms

