ES5A-ES5J

Surface Mount Superfast Rectifiers

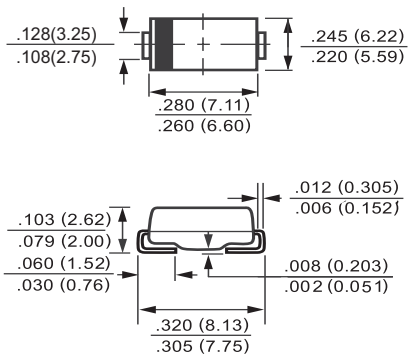
Features

- Super fast switching time for high efficiency
- Low forward voltage drop and high current capability
- Low reverse leakage current
- Plastic material has UL flammability classification 94V-0

Mechanical Data

- Case: DO-214AB (SMC) molded plastic body
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Lead formed for surface mount
- Mounting Position: Any

SMC (DO-214AB)



Dimensions in inches and (millimeters)

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 5A	ES 5B	ES 5C	ES 5D	ES 5E	ES 5G	ES 5H	ES 5J	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_l = 100 °C	I_{FSM}	150								A
Maximum Instantaneous Forward Voltage @ 5.0A	V_F	0.95				1.3		1.7		V
Maximum DC Reverse Current @ T_A =25 °C at Rated DC Blocking Voltage @ T_A=100 °C	I_R	10 500								uA uA
Maximum Reverse Recovery Time (Note 1)	Trr	35								nS
Typical Junction Capacitance (Note 2)	Cj	45				30				pF
Typical Thermal Resistance (Note 3)	$R_{\theta JA}$ $R_{\theta JL}$	47 12								°C /W
Operating Temperature Range	T_J	-55 to +150								°C
Storage Temperature Range	T_{STG}	-55 to +150								°C

Notes: 1. Reverse Recovery Test Conditions: IF=0.5A, IR=1.0A, IRR=0.25A
2. Measured at 1 MHz and Applied VR=4.0 Volts
3. Units Mounted on P.C.B. with 0.6" x 0.6"(16mm x 16mm) Copper Pad Areas

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Characteristic Curves (T_A=25 ℃ unless otherwise noted)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

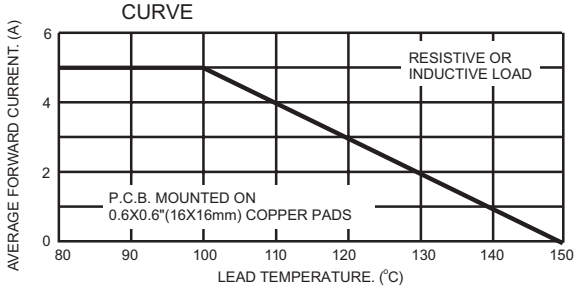


FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

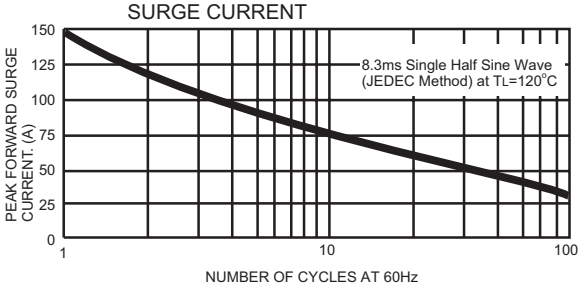


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

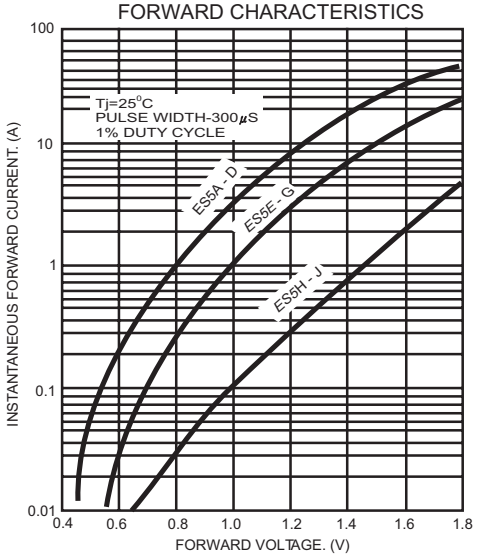


FIG.4- TYPICAL REVERSE CHARACTERISTICS

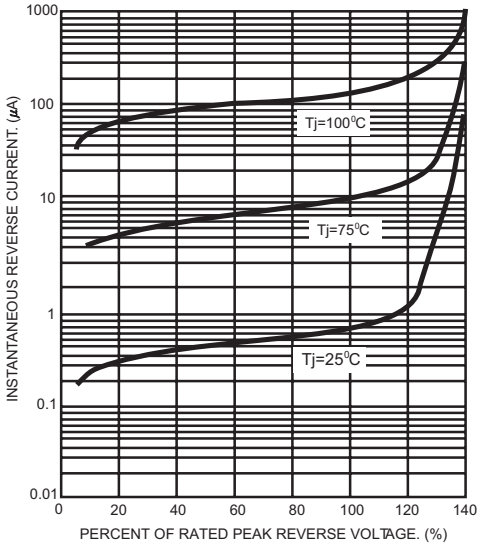


FIG.5- TYPICAL JUNCTION CAPACITANCE

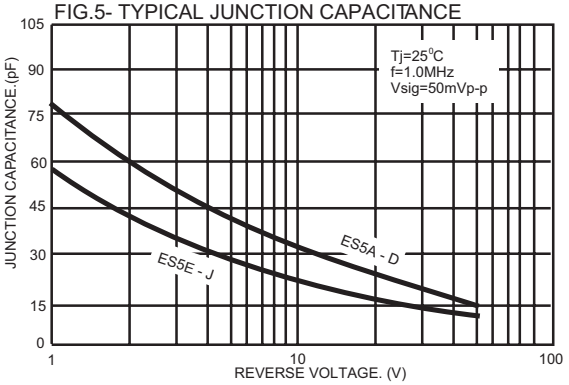


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE

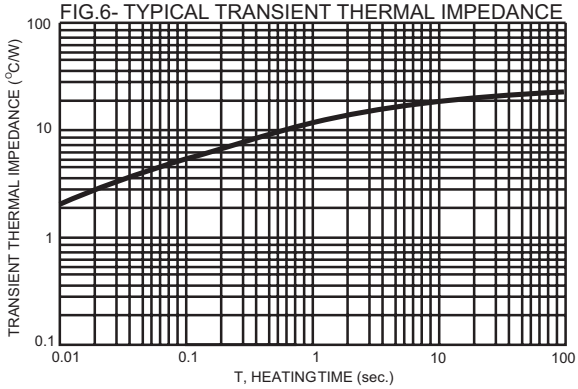
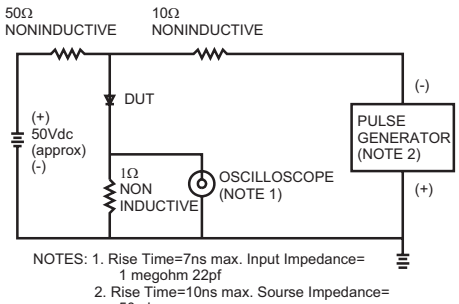


FIG.7- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



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