5A, 200V-600V Super Fast Surface Mount Rectifier

FEATURES

- Glass passivated junction chip
- Ideal for automated placement
- Low reverse leakage
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

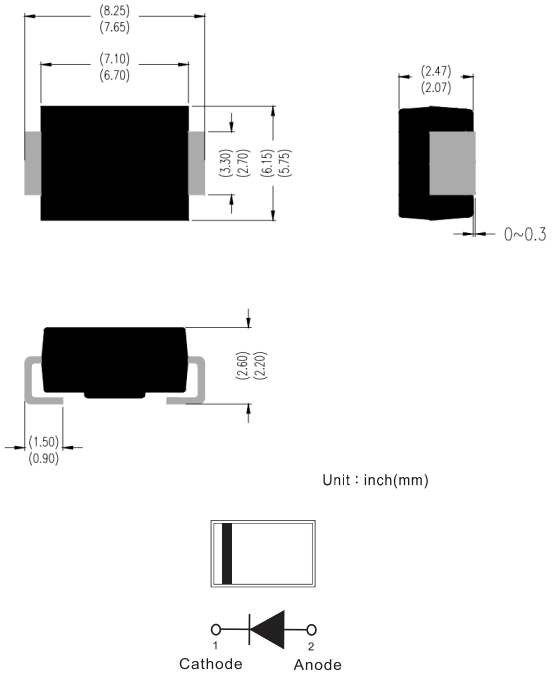
APPLICATIONS

- Switch Mode Power Supply
- Inverters and Converters
- Free Wheeling diodes

MECHANICAL DATA

- Case: DO-214AB (SMC)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.25 g (approximately)

DO-214AB (SMC)



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETER		SYMBOL	ES5D	ES5G	ES5J	UNIT
Repetitive peak reverse voltage		V_{RRM}	200	400	600	V
Reverse voltage, total rms value		$V_{R(RMS)}$	140	280	420	V
DC blocking voltage		V_{DC}	200	400	600	V
Forward current		I_F	5			A
Surge peak forward current single half sine-wave superimposed on rated load	8.3 ms at T_A= 25°C	I_{FSM}	164			A
	1.0 ms at T_A= 25°C		364			A
Junction temperature		T_J	-55 to +150			°C
Storage temperature		T_{STG}	-55 to +150			°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance per diode	$R_{\Theta JL}$	25	°C/W
Junction-to-ambient thermal resistance per diode	$R_{\Theta JA}$	54	°C/W
Junction-to-case thermal resistance per diode	$R_{\Theta JC}$	18	°C/W

Thermal Performance Note: Units mounted on PCB (16mm x 16mm Cu pad test board)

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage (1)	ES5D	I_F = 2.5A, T_J = 25°C	V_F	0.82	-	V
		I_F = 5A, T_J = 25°C		0.89	0.95	V
		I_F = 2.5A, T_J = 125°C		0.67	-	V
		I_F = 5A, T_J = 125°C		0.76	0.85	V
	ES5G	I_F = 2.5A, T_J = 25°C		0.95	-	V
		I_F = 5A, T_J = 25°C		1.08	1.30	V
		I_F = 2.5A, T_J = 125°C		0.77	-	V
		I_F = 5A, T_J = 125°C		0.92	1.10	V
	ES5J	I_F = 2.5A, T_J = 25°C		1.10	-	V
		I_F = 5A, T_J = 25°C		1.36	1.70	V
		I_F = 2.5A, T_J = 125°C		0.83	-	V
		I_F = 5A, T_J = 125°C		0.96	1.20	V
Reverse current @ rated V_R (2)		T_J = 25°C	I_R	-	10	μA
		T_J = 125°C		-	200	μA
Reverse recovery time		I_F=0.5A,I_R=1.0A, Irr=0.25A	t_{rr}	-	35	ns
Junction capacitance	ES5D	1 MHz, V_R=4.0V	C_J	185	-	pF
	ES5G			123	-	pF
	ES5J			71	-	pF

Notes: (1) Pulse test with PW=0.3 ms (2) Pulse test with PW=30 ms

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

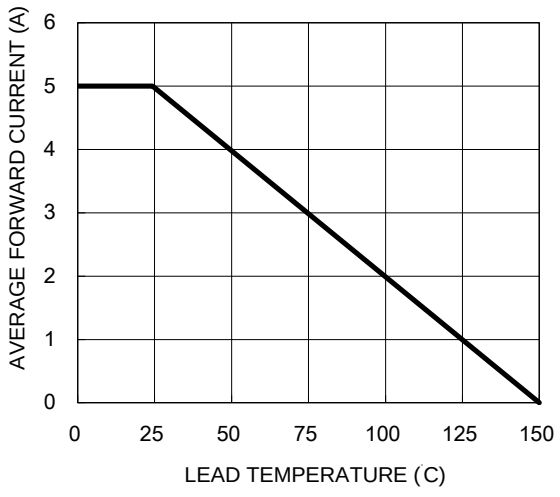
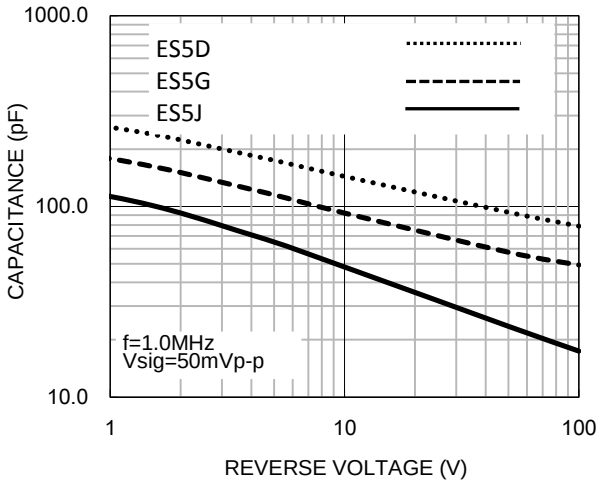


Fig.2 Typical Junction Capacitance



CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.3 Typical Reverse Characteristics

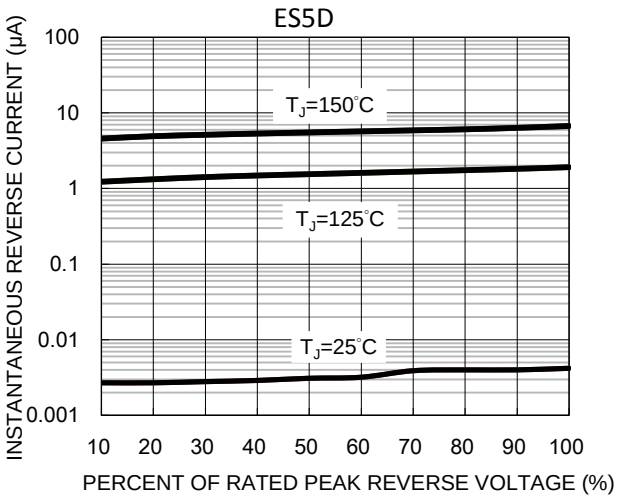


Fig.4 Typical Forward Characteristics

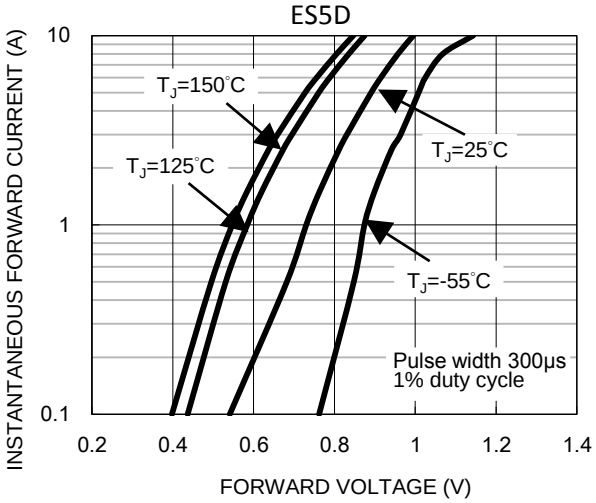


Fig.5 Typical Reverse Characteristics

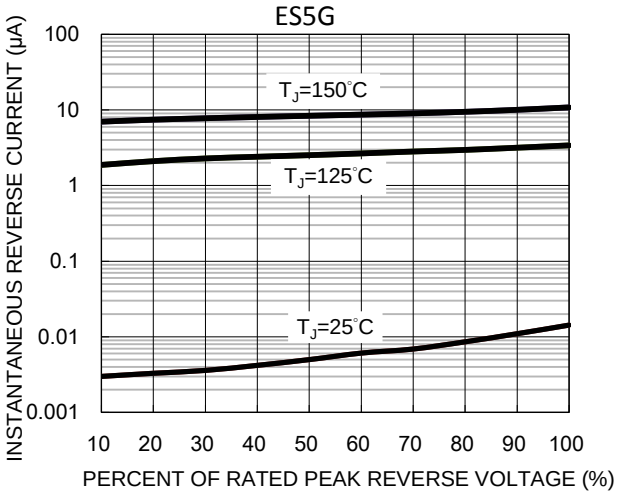


Fig.6 Typical Forward Characteristics

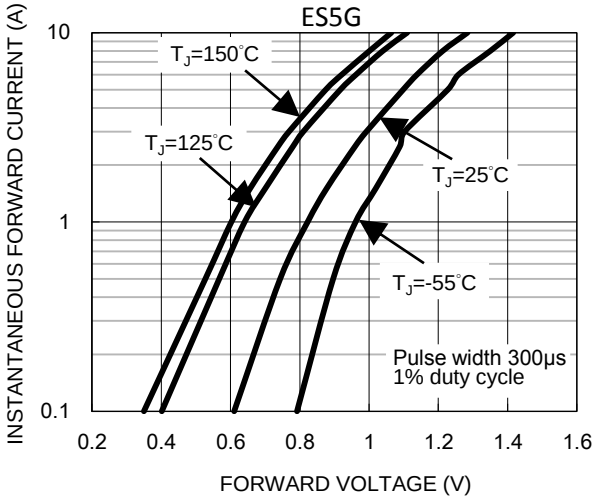


Fig.7 Typical Reverse Characteristics

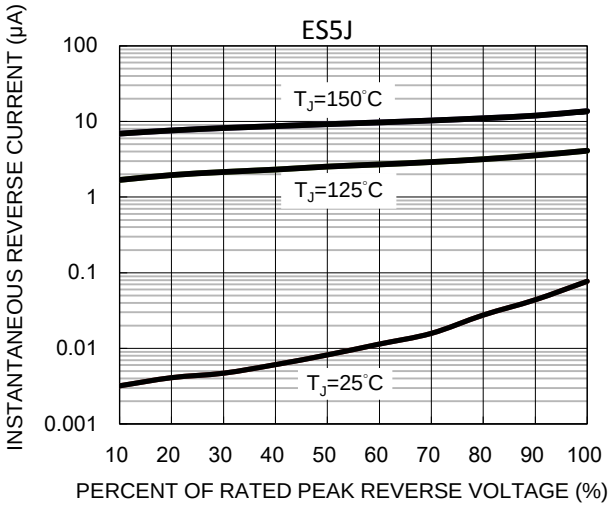


Fig.8 Typical Forward Characteristics