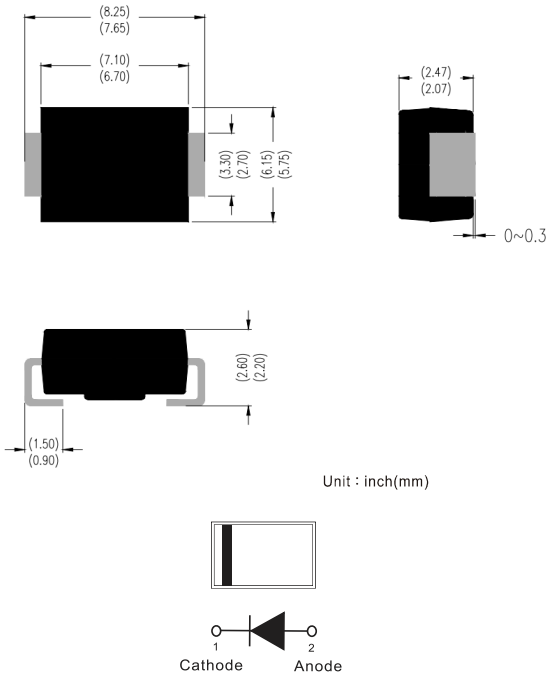
5A, 200V-1000V Fast Recovery Surface Mount Rectifier

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

DO-214AB (SMC)



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)

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

PARAMETER		SYMBOL	RS5D	RS5G	RS5J	RS5K	RS5M	UNIT
Repetitive peak reverse voltage		V_{RRM}	200	400	600	800	1000	V
Reverse voltage, total rms value		$V_{R(RMS)}$	140	280	420	560	700	V
DC blocking voltage		V_{DC}	200	400	600	800	1000	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	$R_{\Theta JL}$	25	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	54	°C/W
Junction-to-case thermal resistance	$R_{\Theta JC}$	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)	RS5D to RS5G	I_F = 2.5A, T_J = 25°C	V_F	0.86	-	V
		I_F = 5A, T_J = 25°C		0.93	1.3	V
		I_F = 2.5A, T_J = 125°C		0.72	-	V
		I_F = 5A, T_J = 125°C		0.79	0.91	V
	RS5J	I_F = 2.5A, T_J = 25°C		0.91	-	V
		I_F = 5A, T_J = 25°C		0.98	1.3	V
		I_F = 2.5A, T_J = 125°C		0.77	-	V
		I_F = 5A, T_J = 125°C		0.85	1.0	V
	RS5K to RS5M	I_F = 2.5A, T_J = 25°C		0.97	-	V
		I_F = 5A, T_J = 25°C		1.06	1.3	V
		I_F = 2.5A, T_J = 125°C		0.82	-	V
		I_F = 5A, T_J = 125°C		0.91	1.04	V
Reverse current @ rated V_R(2)		T_J = 25°C	I_R	-	10	μA
		T_J = 125°C		-	200	μA
Reverse recovery time	RS5D to RS5G	I_F=0.5A,I_R=1.0A, Irr=0.25A	t_{rr}	-	150	ns
	RS5J			-	250	ns
	RS5K to RS5M			-	500	ns
Junction capacitance	RS5D to RS5G	1 MHz, V_R=4.0V	C_J	57	-	pF
	RS5J			46	-	pF
	RS5K to RS5M			31	-	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

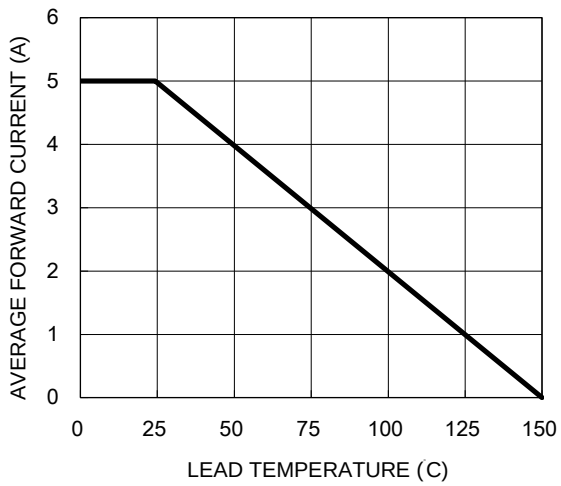
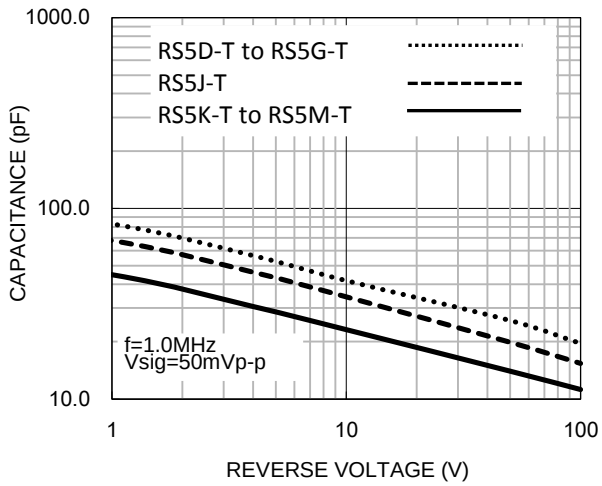


Fig.2 Typical Junction Capacitance



CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.3 Typical Reverse Characteristics

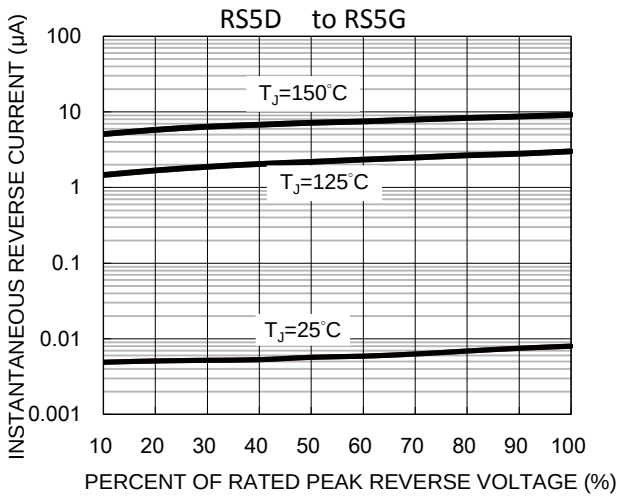


Fig.4 Typical Forward Characteristics

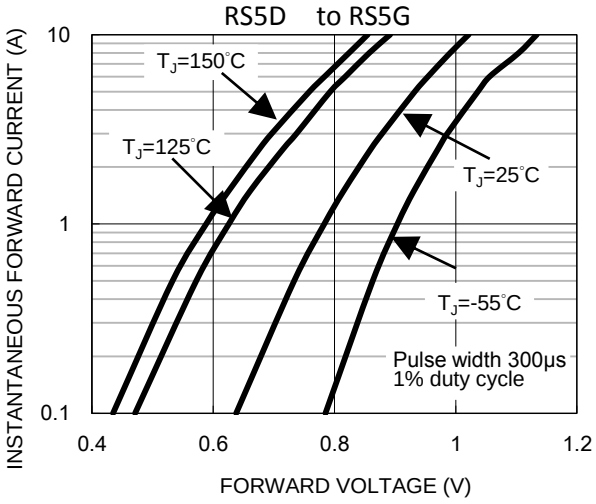


Fig.5 Typical Reverse Characteristics

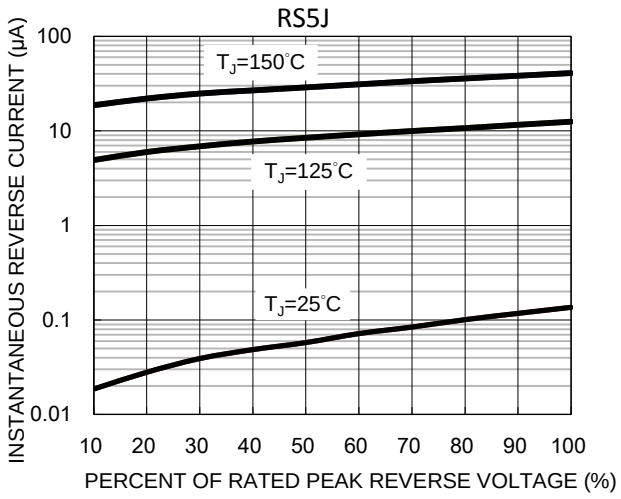


Fig.6 Typical Forward Characteristics

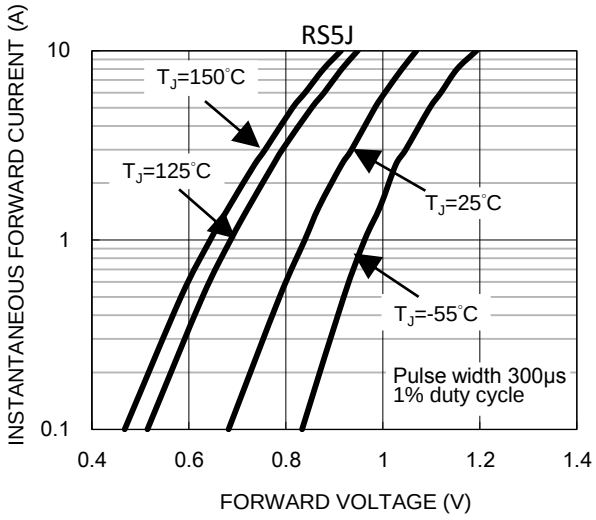


Fig.7 Typical Reverse Characteristics

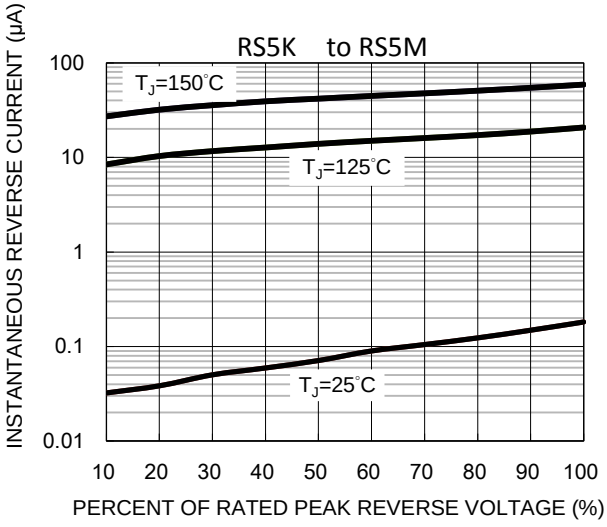


Fig.8 Typical Forward Characteristics