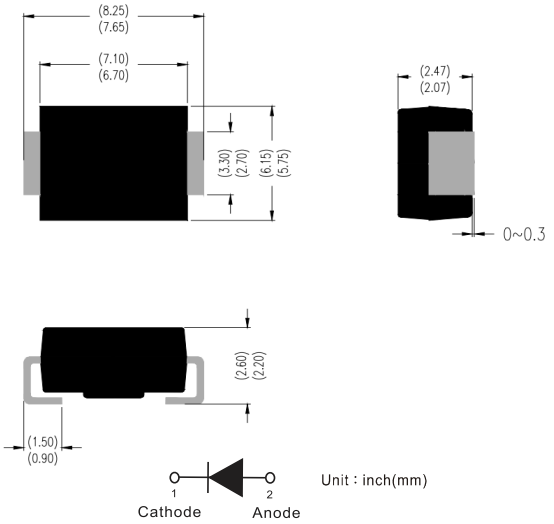
5A, 50V - 600V Surface Mount Super Fast Rectifier

Features

- Glass passivated junction chip
- Ideal for automated placement
- Super fast recovery time for high efficiency
- Comply with RoHS standard, halogen-free

SMC/DO-214AB



Mechanical Data

- package:SMC/DO-214AB
- Polarity: Indicated by cathode band
- Epoxy: UL 94V-0 rate flame retardant
- Mounting Position : Any

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Parameter		Symbol	ES5DC	ES5GC	ES5JC	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			℃
Storage temperature		T_{STG}	-55 to +150			℃

Thermal Performance (T_A=25°C unless otherwise noted)

Parameter	Symbol	TYP	Unit
Junction-to-lead thermal resistance per diode	$R_{\Theta JL}$	25	℃/W
Junction-to-ambient thermal resistance per diode	$R_{\Theta JA}$	54	℃/W
Junction-to-case thermal resistance per diode	$R_{\Theta JC}$	18	℃/W

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)	ES5DC	I_F = 2.5A, T_J = 25℃	V_F	0.82	-	V
		I_F = 5A, T_J = 25℃		0.89	0.95	V
		I_F = 2.5A, T_J = 125℃		0.67	-	V
		I_F = 5A, T_J = 125℃		0.76	0.85	V
	ES5GC	I_F = 2.5A, T_J = 25℃		0.95	-	V
		I_F = 5A, T_J = 25℃		1.08	1.30	V
		I_F = 2.5A, T_J = 125℃		0.77	-	V
		I_F = 5A, T_J = 125℃		0.92	1.10	V
	ES5JC	I_F = 2.5A, T_J = 25℃		1.10	-	V
		I_F = 5A, T_J = 25℃		1.36	1.70	V
		I_F = 2.5A, T_J = 125℃		0.83	-	V
		I_F = 5A, T_J = 125℃		0.96	1.20	V
Reverse current @ rated V_R (2)		T_J = 25℃	I_R	-	10	μA
		T_J = 125℃		-	200	μA
Reverse recovery time		I_F=0.5A,I_R=1.0A, Irr=0.25A	t_{rr}	-	35	ns
Junction capacitance	ES5DC	1 MHz, V_R=4.0V	C_J	185	-	pF
	ES5GC			123	-	pF
	ES5JC			71	-	pF

Characteristics Curves (T_A=25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

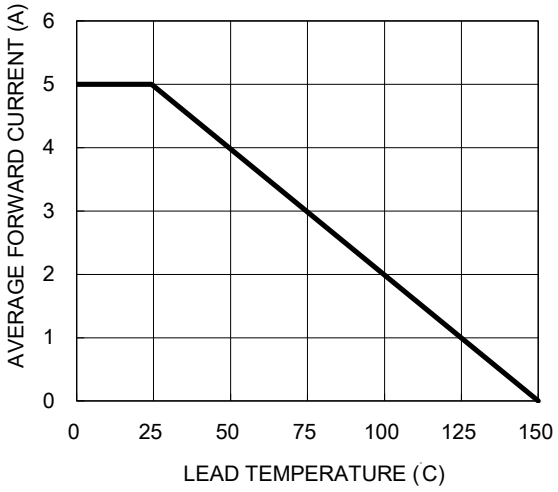


Fig.2 Typical Junction Capacitance

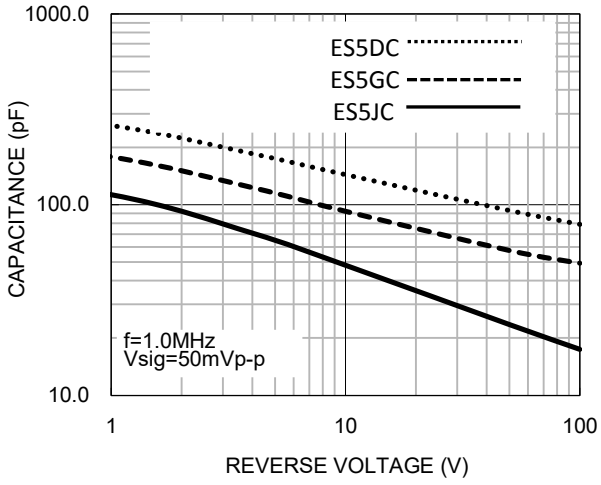


Fig.3 Typical Reverse Characteristics

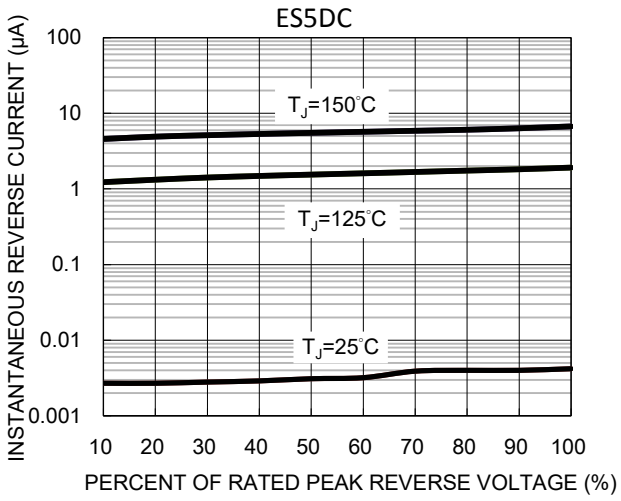


Fig.4 Typical Forward Characteristics

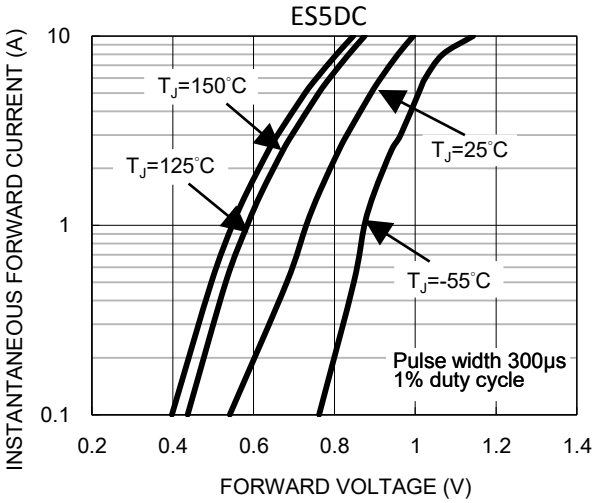


Fig.5 Typical Reverse Characteristics

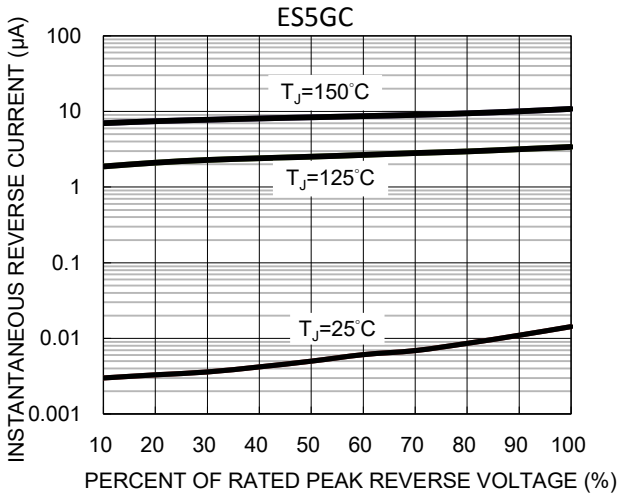


Fig.6 Typical Forward Characteristics

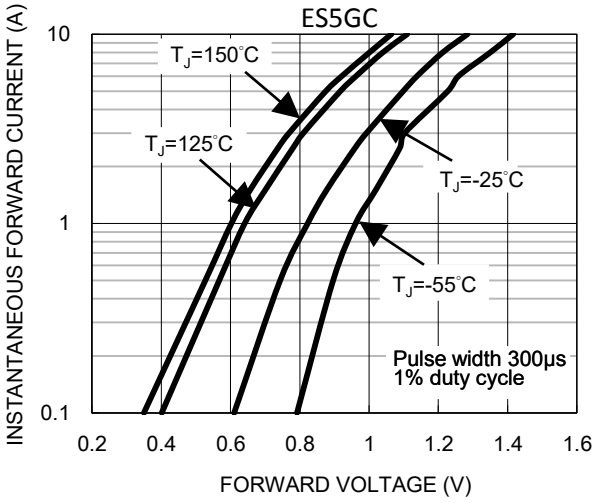


Fig.7 Typical Reverse Characteristics

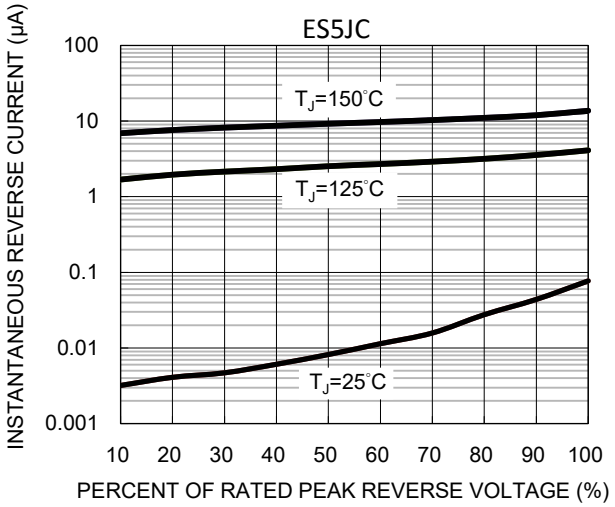


Fig.8 Typical Forward Characteristics