

FrelTec

Mathildenstr. 10A
82319 Starnberg
Germany

Super Fast Surface Mount Rectifier TO-277

TO-277

Super Fast Surface Mount Rectifier

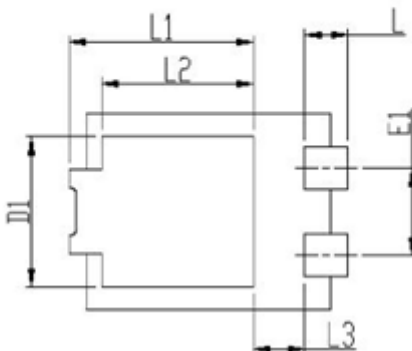
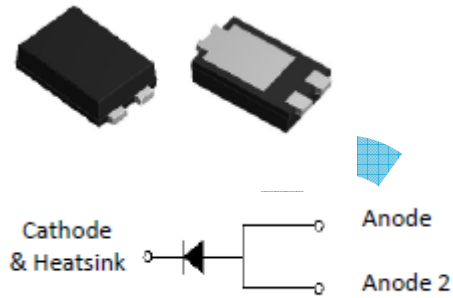
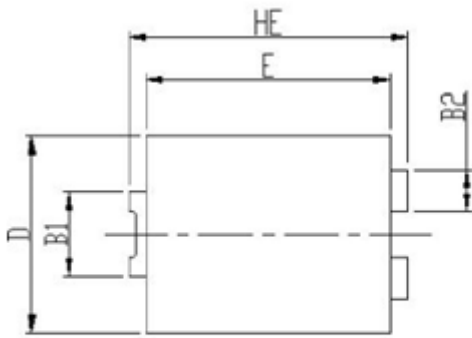
SPECIFICATION

68B	HSGC0603Ux	T277	L05
Type	Type	Package	Packing
68B: Surface Mount Superfast recovery Rectifier	SGC0603U	TO-277 eSGC	L05: tape in Embossed tape and reel for 5000 pc (13" REEL)

All products according to RoHS (2015/863/EU)



PACKAGE OUTLINE



	Min	Max
HE	6,4	6,6
E	5,6	5,8
D	4,1	4,3
B1	1,7	1,9
B2	0,8	1
A	1,05	1,2
C	0,3	0,4
L	0,85	1,1
L1	4,2	4,4
L2	3,52 Typ.	
L3	1,1	1,4
D1	3	3,3
E1	1,86 Typ.	

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Maximum Ratings & Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbols	HSGC0603U	Unit
Maximum repetitive peak reverse voltage	VRRM	200	V
Maximum RMS voltage	VRMS	140	V
Maximum DC blocking voltage	VDC	200	V
Maximum average forward rectified current	IF(AV) ¹⁾	6,0	A
Peak forward surge current 8,3 ms single half sine-wave superimposed on rated load	IFSM	150	A
Operating junction and storage temperature range	TJ,TSTG	-55 to +150	°C

Electrical Characteristics (TA = 25°C unless otherwise noted)				
Parameter	Test Conditions	Symbols	HSGC0603U	Unit
Maximum instantaneous forward voltage	6A, TA=25°C	VF	0,94	Volts
	6A, TA=125°C		0,80	
Maximum DC reverse current at rated DC blocking voltage	TA=25°C	IR	2	uA
	TA=125°C		50	
Typical junction capacitance	4,0V, 1 MHz	CJ	60	pF
Typical thermal resistance	junction to mount	R _{θJM} ¹⁾	6	°C /W
	junction to mount	R _{θJM} ²⁾	11	
	junction to ambient	R _{θJA} ²⁾	29	

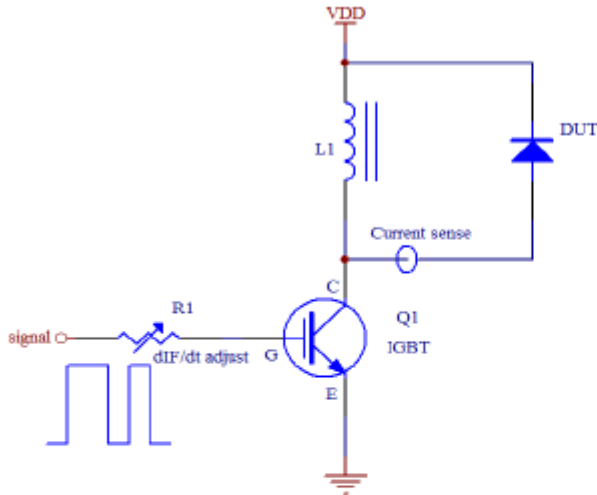
Notes: 1). Thermal resistance R_{θJM} is junction to mount, Free air, mounted on P.C.B with recommended copper pad area2). Thermal resistance R_{θJA} is junction to ambient. Mounted on P.C.B with 30x30mm copper pad area

Dynamic Characteristics (TA = 25°C unless otherwise noted)					
Parameter	Test Conditions	Symbols	Typ.	Max.	Unit
Typical Reverse recovery time	IF=0,5A, IR=1,0A, Irr=0,25A	t _{rr}	-	25	Volts
	IF=6A, VR=160V, Dif/dt=-200A/us		28		
	IF=6A, VR=160V, Dif/dt=-200A/us		27		

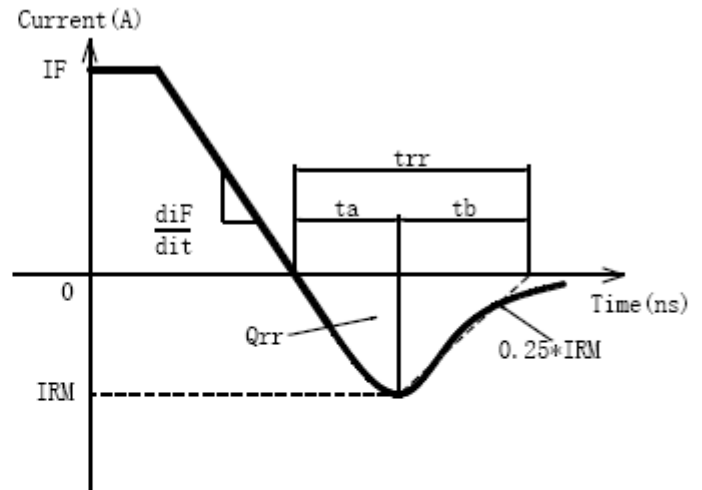
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Typical Peak reverse recovery current	IF=6A, VR=160V, Dif/dt=-200A/us	I _{rm}	2		A
Typical Recovered charge	IF=6A, VR=160V, Dif/dt=-200A/us	Q _{rr}	34		nC

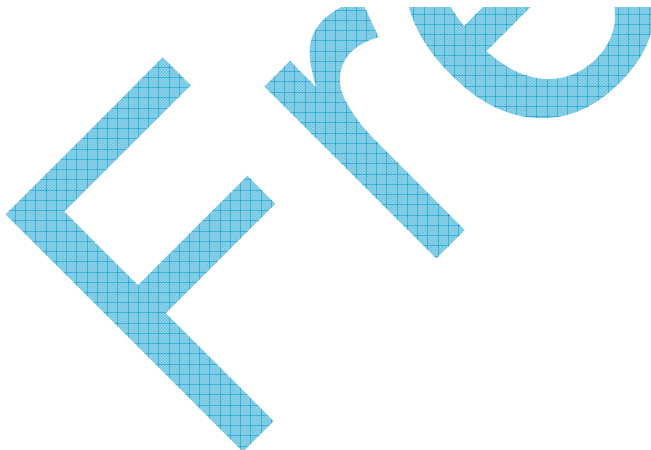


Reverse Recovery Parameter Test Circuit



Reverse Recovery Waveform and Definitions

- Note: 1, dI_F/dt - rate of change of current
 2, I_{RM} - peak reverse recovery current
 3, t_{rr} -reverse recovery time measured from zero crossing point of negative going I_F to point where a line passing through I_{RM} and $0.25I_{RM}$ extrapolated to zero current
 4, Q_{rr} -area under curve defined by t_{rr} and I_{RM} $Q_{rr}=t_{rr} \cdot I_{RM}/2$



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Characteristics(Typical)

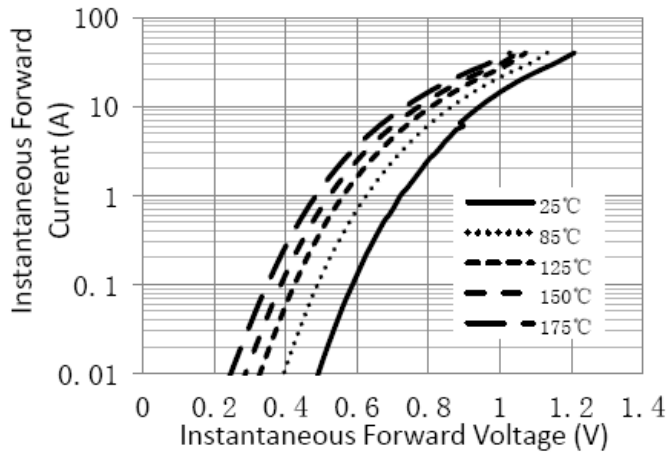


Figure 1. Typical Instantaneous Forward Characteristics

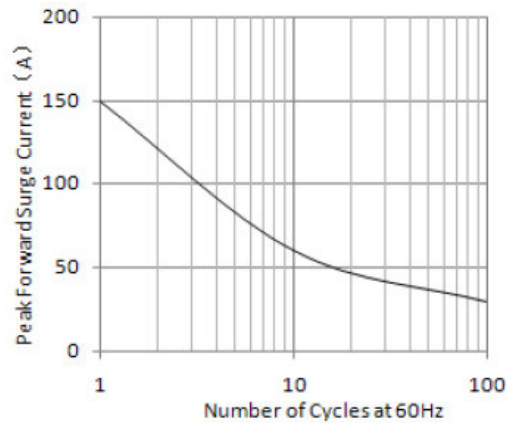


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

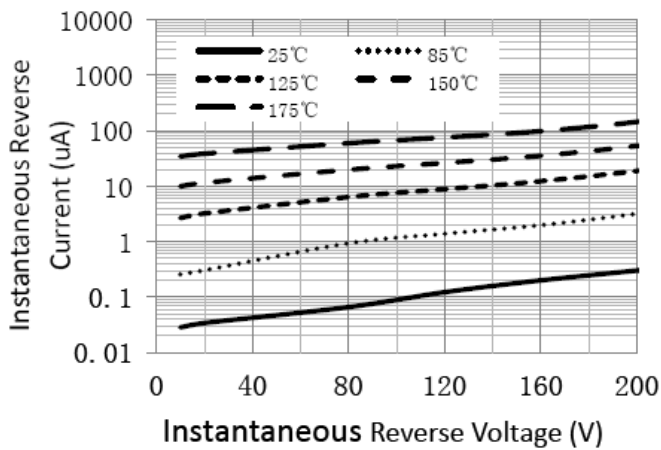


Figure 3. Typical Instantaneous Reverse Characteristics

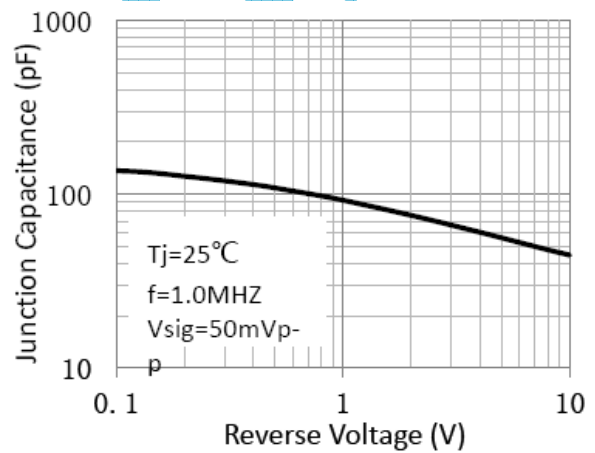


Figure 4. Typical Junction Capacitance

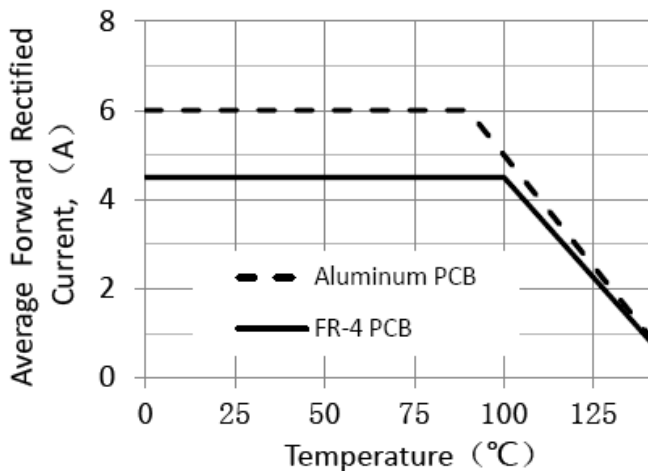
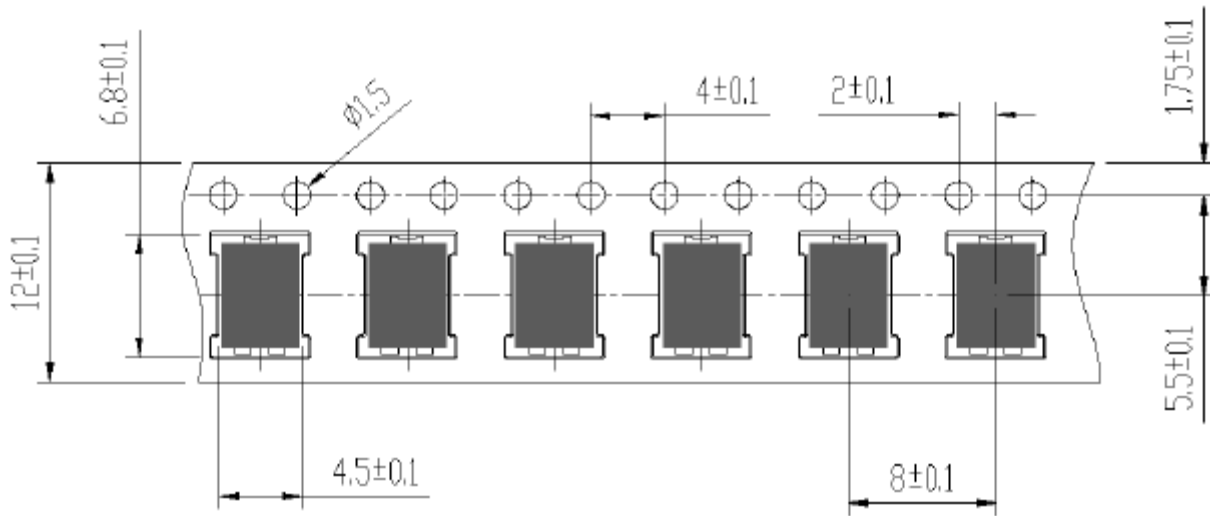


Figure 5. Forward Current Derating Curve

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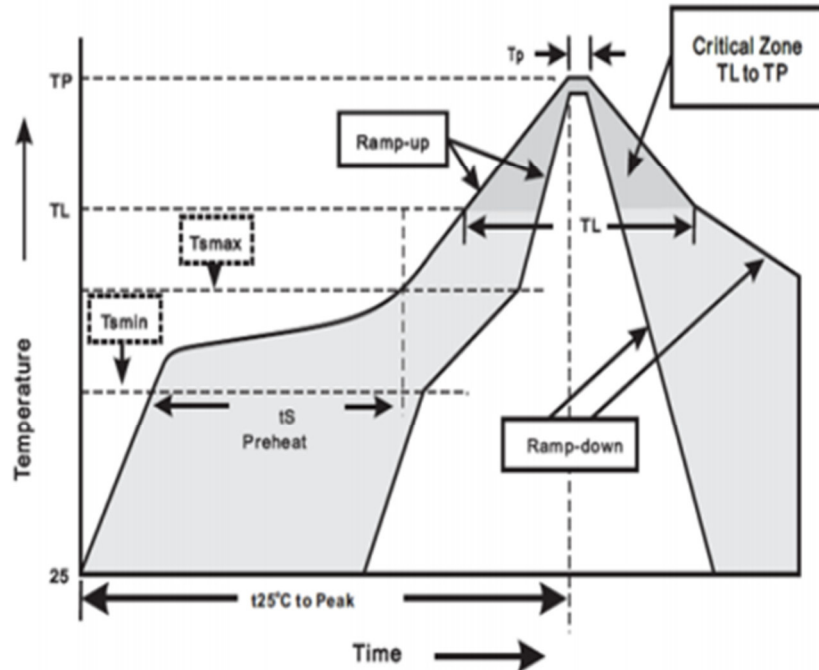
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Size (Unit:mm)



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Soldering Parameters



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Stock period

The performance of these products, including the solderability, is guaranteed for 12 month, provided that they remain packed as they were when delivered and stored at a temperature of 20-30°C and a relative humidity 20-60%RH

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