1 Characteristics

Table 2. Absolute ratings (limiting values)

Symbol	Parameter			Value	Unit
V_{RRM}	Repetitive peak reverse voltage			600	V
$I_{F(RMS)}$	Forward rms current			7	A
$I_{F(AV)}$	Average forward current, $\delta = 0.5$	DO-41	T_l = 90 °C	2	A
		SMA	T_l = 100 °C	2	
		SMB	T_l = 115 °C	2	
I_{FSM}	Surge non repetitive forward current	DO-41	t_p = 10 ms sinusoidal	45	A
		SMA / SMB		35	
T_{stg}	Storage temperature range			-65 to + 175	°C
T_j	Maximum operating junction temperature			175	°C

Table 3. Thermal resistance

Symbol	Parameter		Maximum	Unit
$R_{th(j-l)}$	Junction to lead	DO-41 L = 5 mm	35	°C/W
		SMA	30	
		SMB	25	

Table 4. Static electrical characteristics

Symbol	Parameter	Test conditions		Min.	Typ.	Max.	Unit
I_R(1)	Reverse leakage current	T_j = 25 °C	$V_R = V_{RRM}$			2	µA
		T_j= 150 °C			12	85	
V_F(2)	Forward voltage drop	T_j = 25 °C	I_F = 2 A			1.3	V
		T_j = 150 °C			0.85	1.05	

1. Pulse test: t_p = 5 ms, δ < 2 %
2. Pulse test: t_p = 380 µs, δ < 2 %

To evaluate the maximum conduction losses use the following equation:
$P = 0.89 \times I_{F(AV)} + 0.08\ I_{F^2(RMS)}$

Table 5. Dynamic electrical characteristics

Symbol	Parameter	Test conditions		Min.	Typ.	Max.	Unit
t_{rr}	Reverse recovery time	T_j = 25 °C	I_F = 1 A, dI_F/dt = 50 A/µs, V_R = 30 V		60	85	ns
t_{fr}	Forward recovery time	T_j = 25 °C	I_F = 2 A dI_F/dt = 100 A/µs V_{FR} = 1.1 x V_{Fmax}			100	ns
V_{FP}	Forward recovery voltage					9	V

Figure 1. Conduction losses vs average forward current

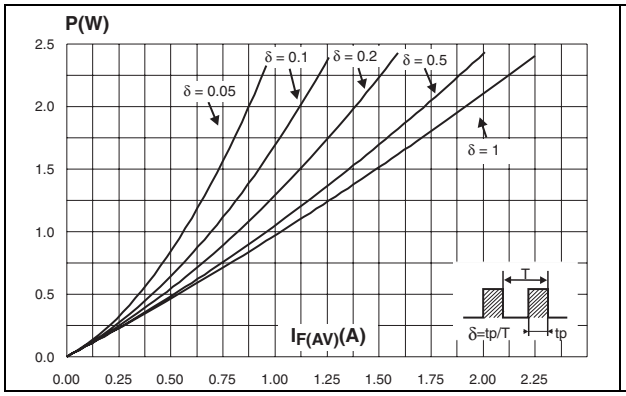


Figure 2. Forward voltage drop vs forward current

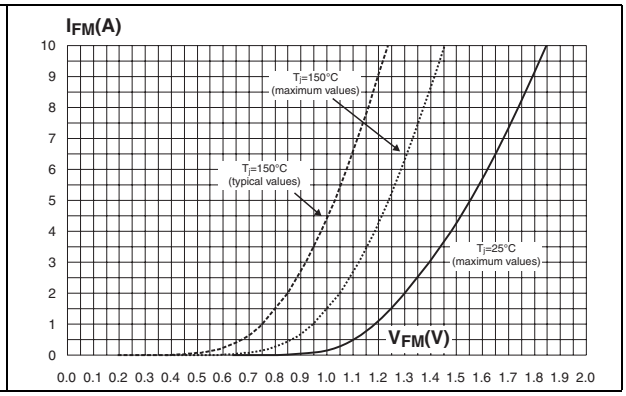


Figure 3. Relative variation of thermal impedance junction to case vs pulse duration (SMA - S_{CU} = 1 cm²)

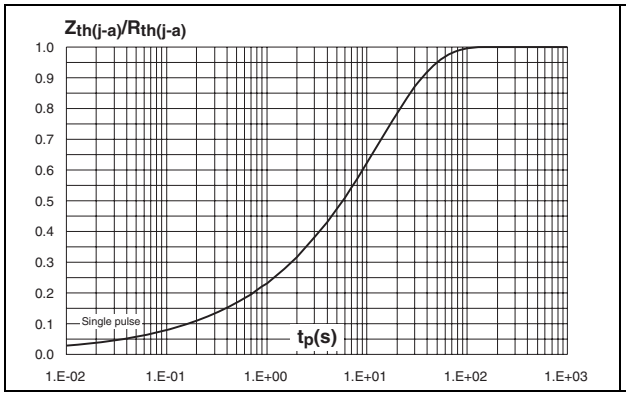


Figure 4. Relative variation of thermal impedance junction to case vs pulse duration (SMB - S_{CU} = 1 cm²)

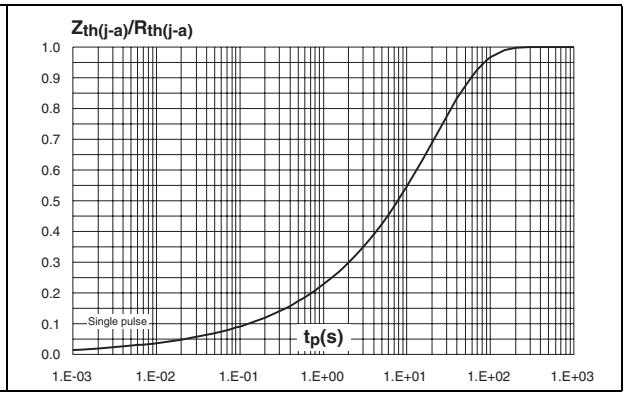


Figure 5. Relative variation of thermal impedance junction to case vs pulse duration (DO-41)

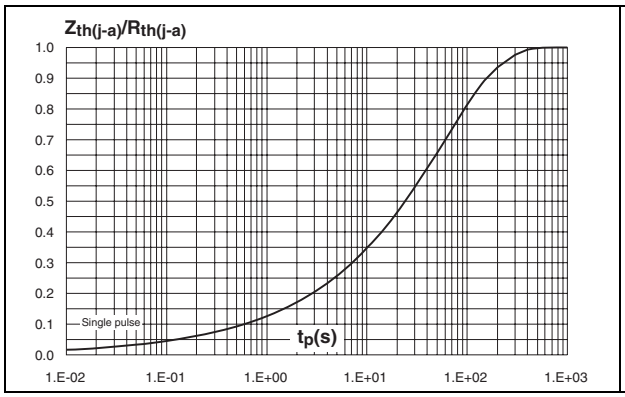


Figure 6. Peak reverse recovery current vs dI_F/dt (typical values)

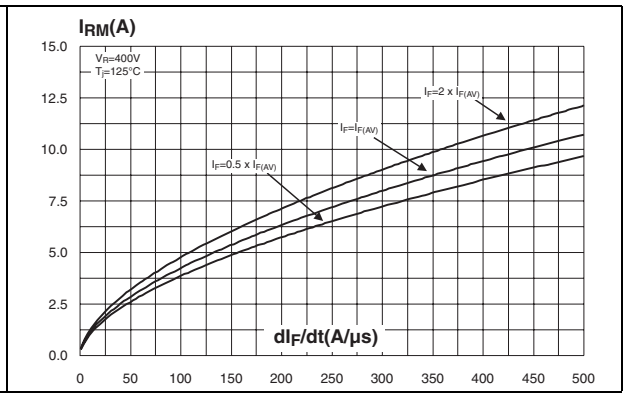


Figure 7. Reverse recovery time vs dI_F/dt (typical values)

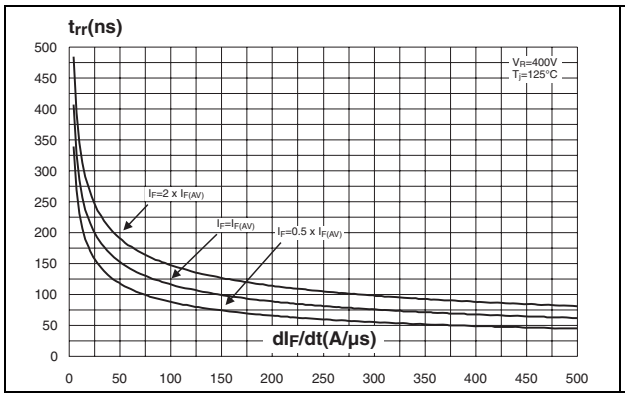


Figure 8. Reverse recovery charges vs dI_F/dt (typical values)

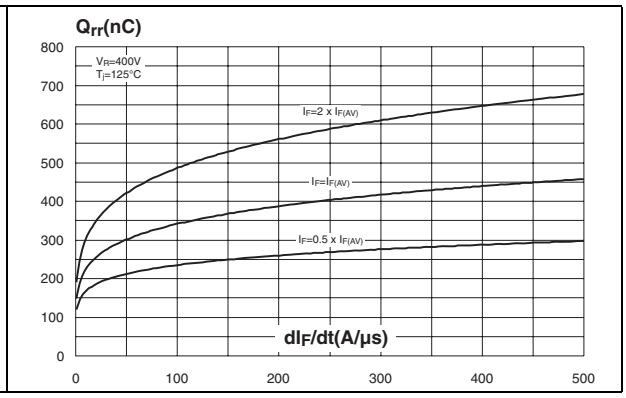


Figure 9. Relative variations of dynamic parameters vs junction temperature

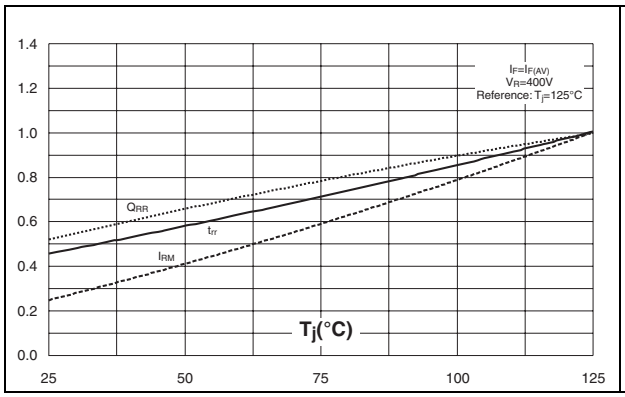


Figure 10. Transient peak forward voltage vs dI_F/dt (typical values)

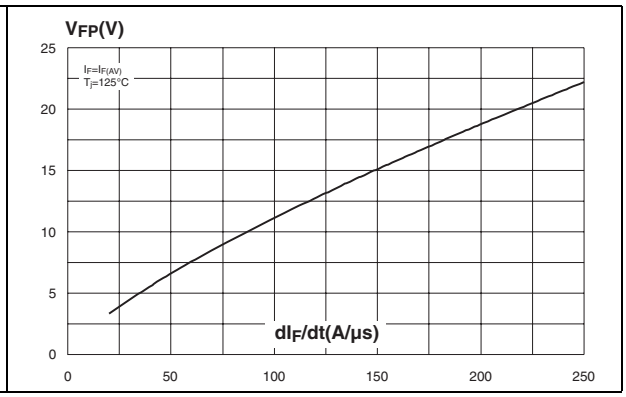


Figure 11. Forward recovery time vs dI_F/dt (typical values)

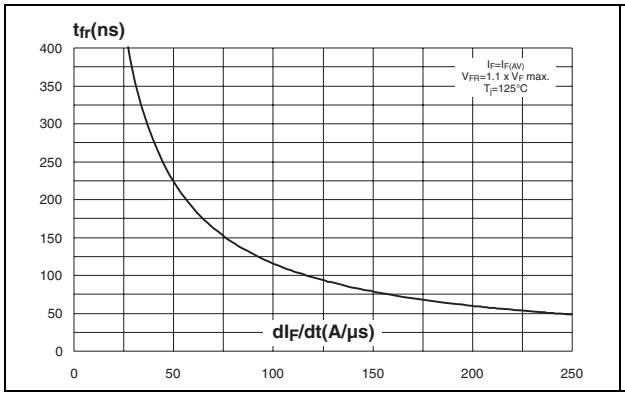


Figure 12. Junction capacitance vs reverse voltage applied (typical values)

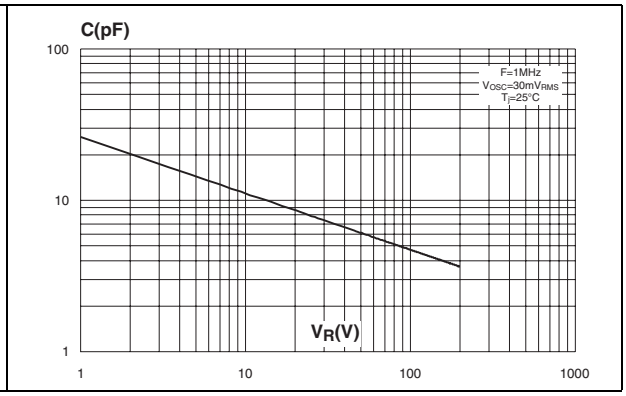


Figure 13. Thermal resistance junction to ambient vs copper surface under tab (epoxy FR4, Cu = 35 µm)

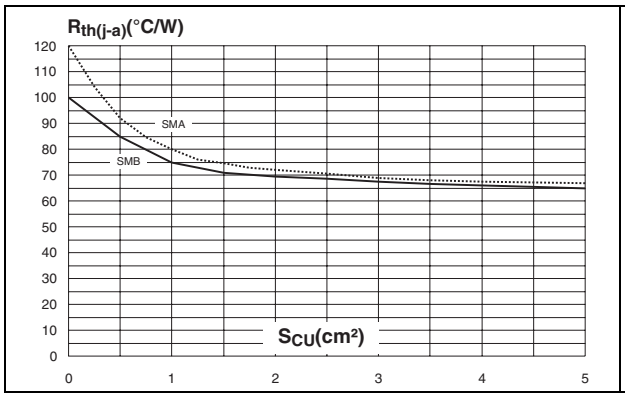
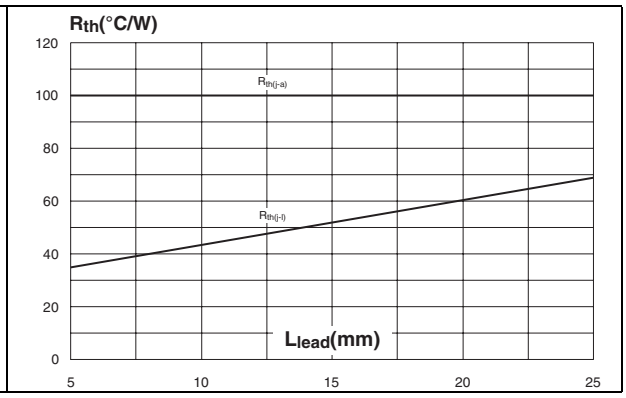


Figure 14. Thermal resistance vs lead lengh (DO-41)



2 Package information

- Epoxy meets UL 94, V0
- Band indicates cathode
- Bending method (DO-41): see Application note AN1471

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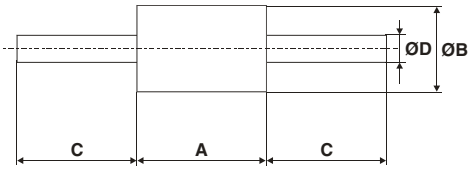
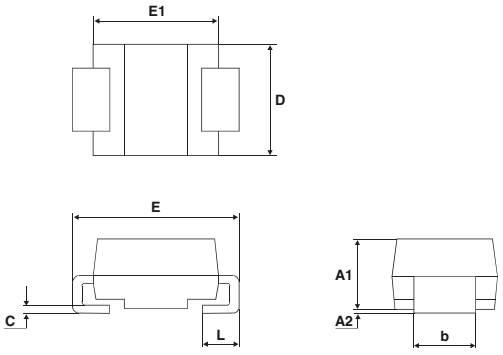
Table 6. DO-41 (plastic) dimensions



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.07	5.20	0.160	0.205
B	2.04	2.71	0.080	0.107
C	25.4		1	
D	0.71	0.86	0.028	0.034

Table 7. SMA dimensions



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A1	1.90	2.45	0.075	0.094
A2	0.05	0.20	0.002	0.008
b	1.25	1.65	0.049	0.065
c	0.15	0.40	0.006	0.016
D	2.25	2.90	0.089	0.114
E	4.80	5.35	0.189	0.211
E1	3.95	4.60	0.156	0.181
L	0.75	1.50	0.030	0.059

Figure 15. Footprint (dimensions in mm)

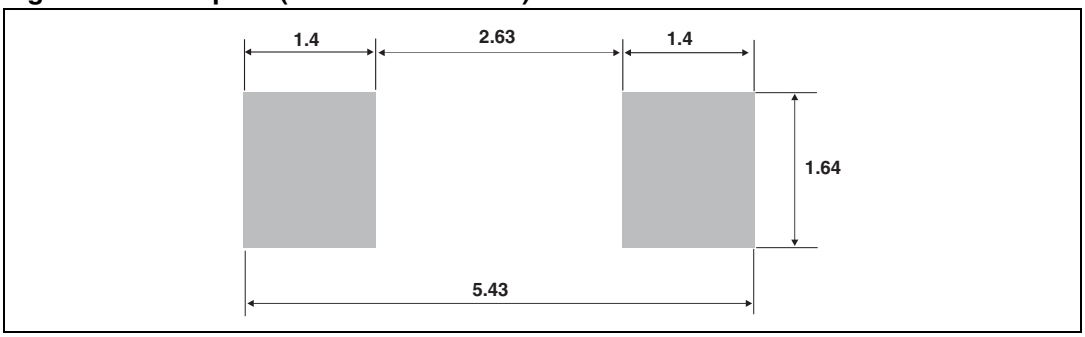
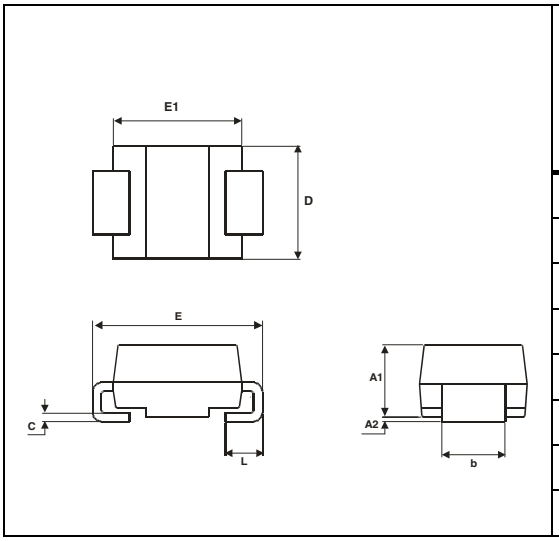
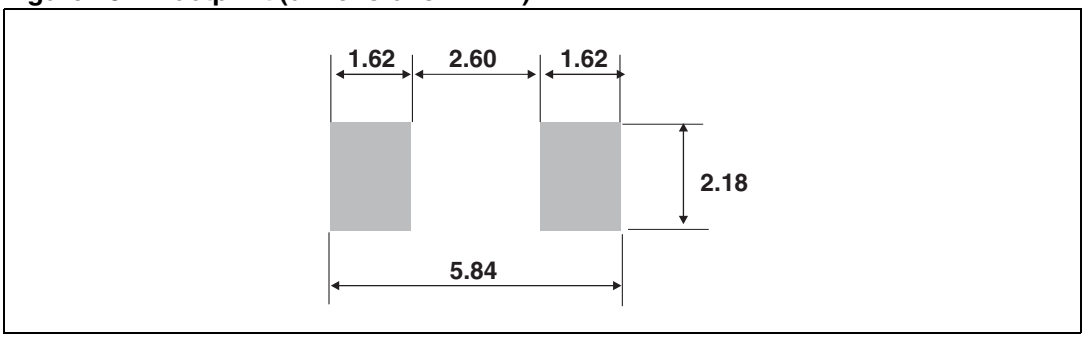


Table 8. SMB dimensions



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A1	1.90	2.45	0.075	0.096
A2	0.05	0.20	0.002	0.008
b	1.95	2.20	0.077	0.087
c	0.15	0.40	0.006	0.016
D	3.30	3.95	0.130	0.156
E	5.10	5.60	0.201	0.220
E1	4.05	4.60	0.159	0.181
L	0.75	1.50	0.030	0.059

Figure 16. Footprint (dimensions in mm)



3 Ordering information

Table 9. Ordering information

Order code	Marking	Package	Weight	Base qty	Delivery mode
STTH2L06	STTH2L06	DO-41	0.34 g	2000	Ammopack
STTH2L06RL	STTH2L06	DO-41	0.34 g	5000	Tape and reel
STTH2L06A	L6A	SMA	0.068 g	5000	Tape and reel
STTH2L06U	L6U	SMB	0.11 g	2500	Tape and reel

4 Revision history

Table 10. Document revision history

Date	Revision	Changes
07-Sep-2004	1	First issue.
30-Sep-2009	2	Updated table 6 package dimensions.

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