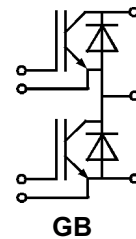
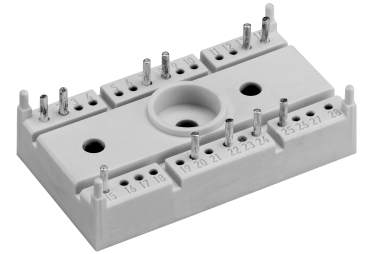


SEMITOP® 3 IGBT Module

SK 60 GB 123



Absolute Maximum Ratings			
Symbol	Conditions ¹⁾	Values	Units
V _{CEs}		1200	V
V _{GES}		± 20	V
I _C	T _h = 25/80 °C	58 / 40	A
I _{CM}	t _p < 1 ms; T _h = 25/80 °C	116 / 80	A
I _F = -I _C	T _h = 25/80 °C	57 / 38	A
I _{FM} = -I _{CM}	t _p < 1 ms; T _h = 25/80 °C	114 / 76	A
T _j		- 40 ... + 150	°C
T _{stg}		- 40 ... + 125	°C
T _{sol}	Terminals, 10 s	260	°C
V _{isol}	AC, 1 min	2500	V

Characteristics					
Symbol	Conditions ¹⁾	min.	typ.	max.	Units
V _{CEsat}	I _C = 40 A; T _j = 25 (125) °C	-	2,5(3,0)	-	V
t _{d(on)}	V _{CC} = 600 V; V _{GE} = ± 15 V I _C = 40 A, T _j = 125 °C R _{Gon} = R _{Goff} = 22 Ω inductive load	-	40	-	ns
t _r		-	50	-	ns
t _{d(off)}		-	380	-	ns
t _f		-	75	-	ns
E _{on} + E _{off}		-	10	-	mJ
C _{ies}		-	3,5	-	nF
R _{thjh} ³⁾		-	-	0,6	K/W
Inverse Diode ²⁾					
V _F = V _{EC}	I _F = 50 A; T _j = 25 (125) °C	-	2,0(1,8)	-	V
V _{TO}	T _j = 125 °C	-	1,0	1,2	V
r _T	T _j = 125 °C	-	16	22	mΩ
I _{RRM}	I _F = 50 A; V _R = 600 V di _F /dt = - 800 A/μs	-	40	-	A
Q _{rr}		-	8,0	-	μC
E _{off}		-	2,0	-	mJ
R _{thjh} ³⁾	per Diode	-	-	0,9	K/W
Mechanical Data					
M ₁	mounting torque	-	-	2,5	Nm
w		-	29	-	g
Case		T 27			

Features

- Compact design
- One screw mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- N channel, homogeneous Silicon structure (NPT-Non punch-through IGBT)
- High short circuit capability
- Low tail current with low temperature dependence
- UL recognized, file no. E 63 532

Typical Applications

- Switching (not for linear use)
- Inverter
- Switched mode power supplies
- UPS

¹⁾ T_h = 25 °C, unless otherwise specified
²⁾ CAL = Controlled Axial Lifetime Technology (soft and fast recovery)
³⁾ Thermal resistance junction to heatsink

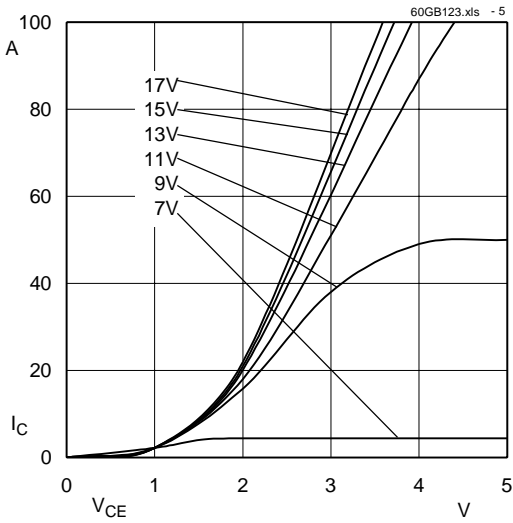


Fig. 5 Typ. output characteristic, $t_p = 80 \mu s$; $25 \text{ }^\circ\text{C}$

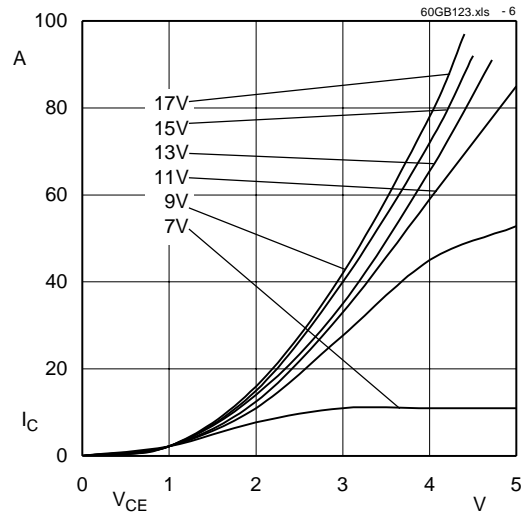


Fig. 6 Typ. output characteristic, $t_p = 80 \mu s$; $125 \text{ }^\circ\text{C}$

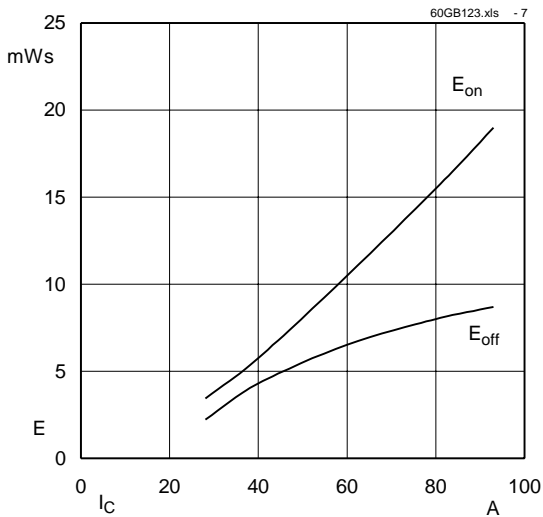


Fig. 7 Turn-on /-off energy = $f(I_c)$

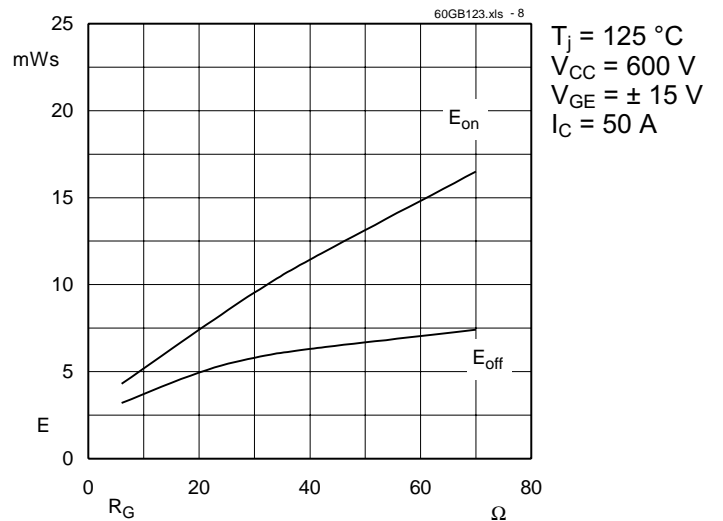


Fig. 8 Turn-on /-off energy = $f(R_G)$

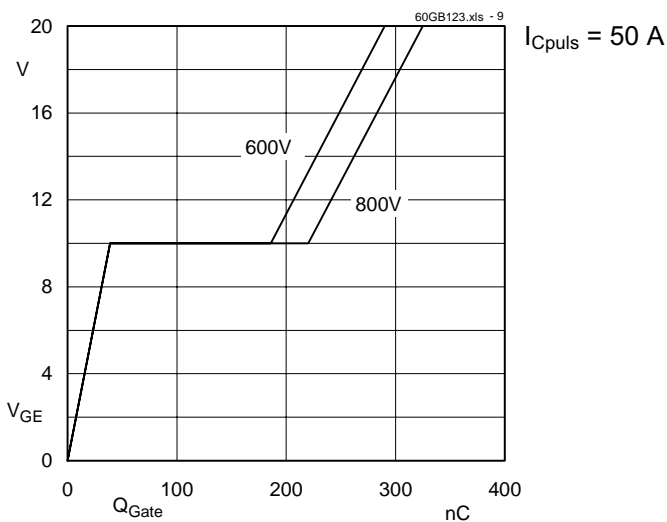


Fig. 9 Typ. gate charge characteristic

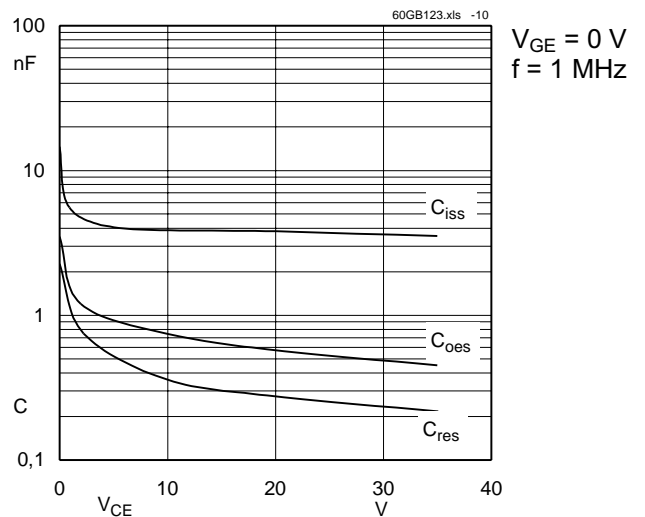


Fig. 10 Typ. capacitances vs. V_{CE}

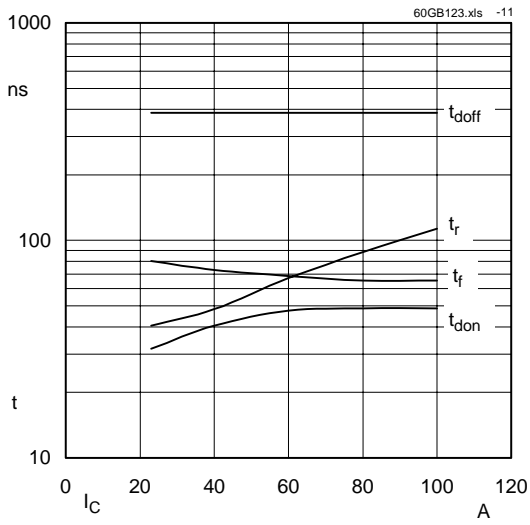


Fig. 11 Typ. switching times vs. I_C

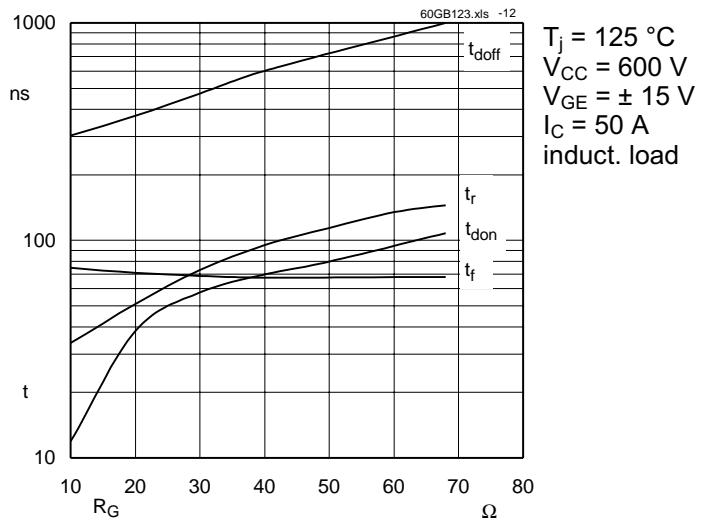


Fig. 12 Typ. switching times vs. gate resistor R_G

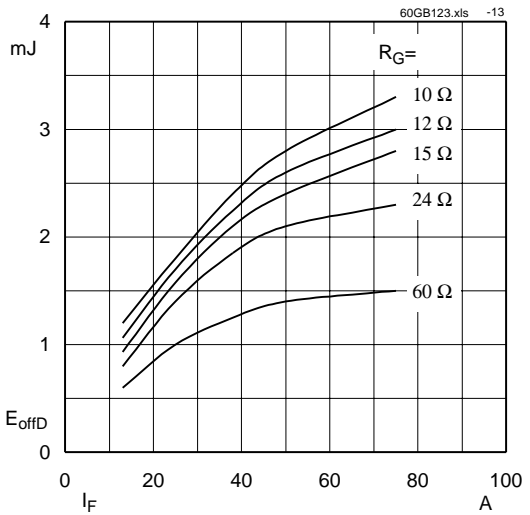
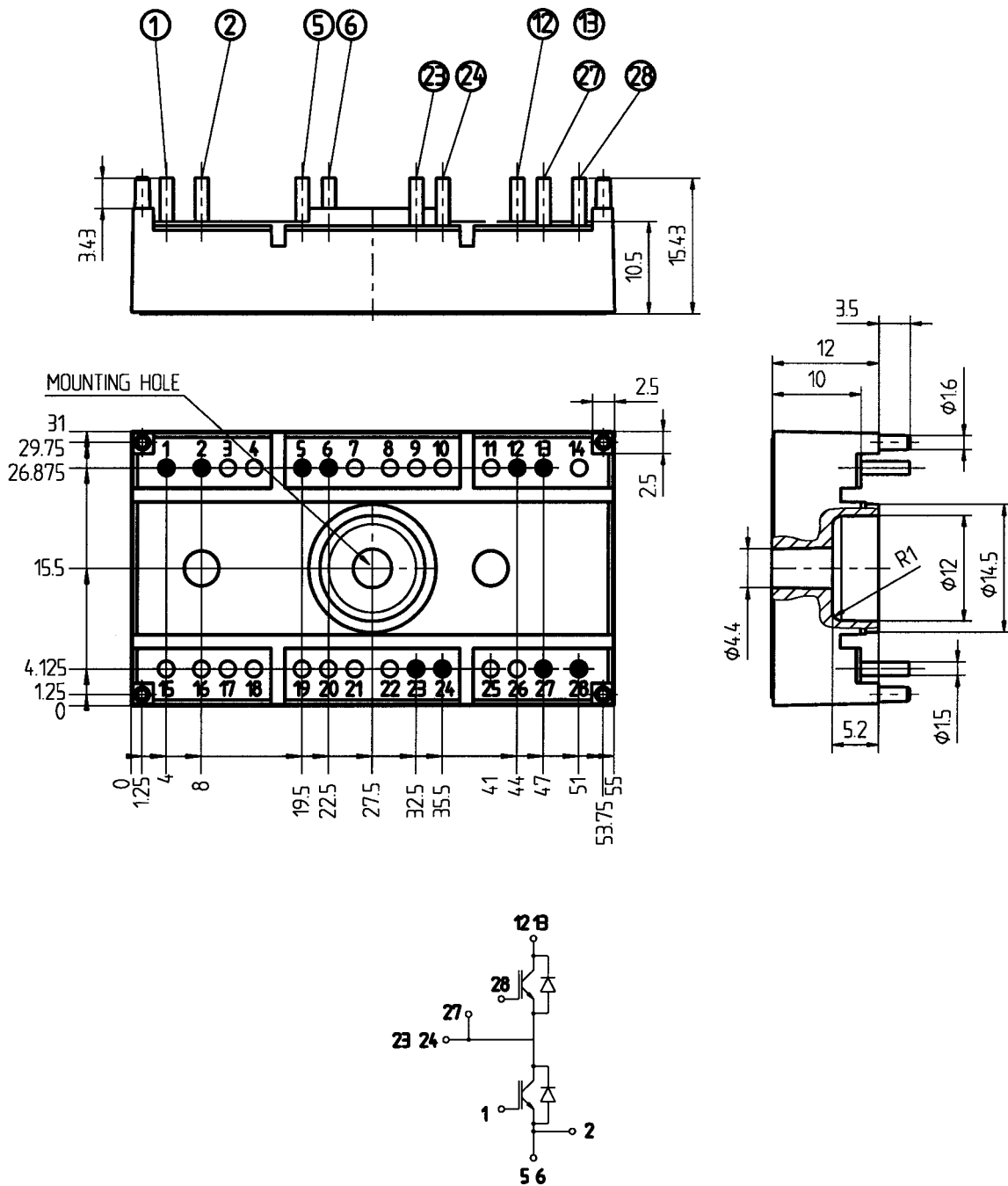


Fig. 13 Diode turn-off energy dissipation per pulse

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Case T 27



Dimensions in mm

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