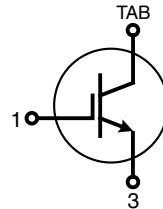


High Voltage IGBT

Short Circuit SOA Capability
Square RBSOA

$I_{C25} = 38 \text{ A}$
 $V_{CES} = 1200 \text{ V}$
 $V_{CE(sat) \text{ typ}} = 2.4 \text{ V}$



IGBT			
Symbol	Conditions	Maximum Ratings	
V_{CES}	$T_{VJ} = 25^\circ\text{C to } 150^\circ\text{C}$	1200	V
V_{GES}		± 20	V
I_{C25}	$T_C = 25^\circ\text{C}$	38	A
I_{C90}	$T_C = 90^\circ\text{C}$	25	A
I_{CM} V_{CEK}	$V_{GE} = 15 \text{ V}; R_G = 82 \Omega; T_{VJ} = 125^\circ\text{C}$ RBSOA, clamped inductive load; $L = 100 \mu\text{H}$	35	A
		V_{CES}	
t_{SC} (SCSOA)	$V_{CE} = V_{CES}; V_{GE} = \pm 15 \text{ V}; R_G = 82 \Omega; T_{VJ} = 125^\circ\text{C}$ non-repetitive	10	μs
P_{tot}	$T_C = 25^\circ\text{C}$	200	W

Features

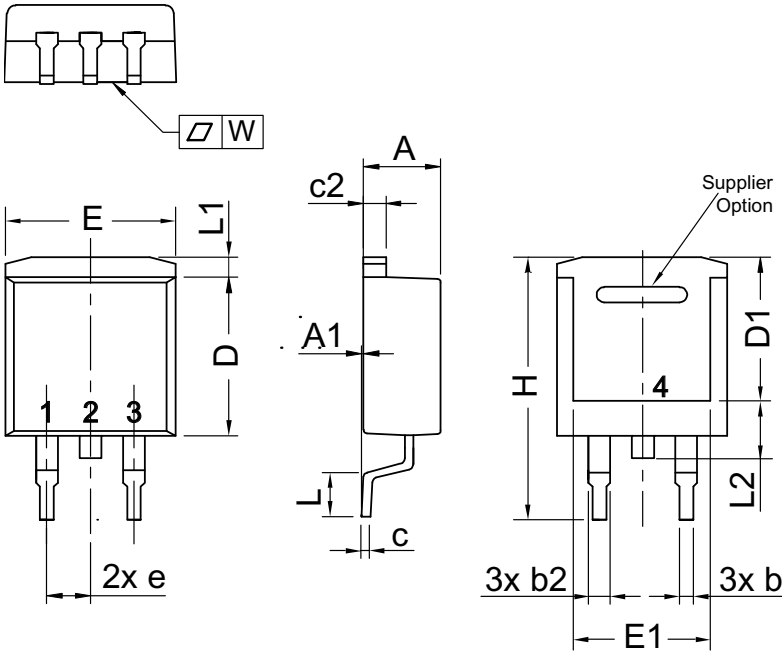
- **NPT IGBT**
 - low saturation voltage
 - positive temperature coefficient for easy paralleling
- **TO-263 package**
 - SMD assembly
 - industry standard outline

Applications

- **drives**
- **power supplies**
 - switched mode power supplies
 - uninterruptible power supplies

Symbol	Conditions	Characteristic Values			
		$(T_{VJ} = 25^\circ\text{C}, \text{ unless otherwise specified})$			
		min.	typ.	max.	
$V_{CE(sat)}$	$I_C = 20 \text{ A}; V_{GE} = 15 \text{ V};$ $T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$		2.4	3.0	V
			2.6		V
$V_{GE(th)}$	$I_C = 0.6 \text{ mA}; V_{GE} = V_{CE}$	4.5		6.5	V
I_{CES}	$V_{CE} = V_{CES}; V_{GE} = 0 \text{ V};$ $T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$		0.8	0.8	mA mA
I_{GES}	$V_{CE} = 0 \text{ V}; V_{GE} = \pm 20 \text{ V}$			200	nA
$t_{d(on)}$	Inductive load; $T_{VJ} = 125^\circ\text{C}$ $V_{CE} = 600 \text{ V}; I_C = 20 \text{ A}$ $V_{GE} = \pm 15 \text{ V}; R_G = 82 \Omega$		100		ns
t_r			75		ns
$t_{d(off)}$			500		ns
t_f			70		ns
E_{on}			3.1		mJ
E_{off}			2.4		mJ
C_{ies}	$V_{CE} = 25 \text{ V}; V_{GE} = 0 \text{ V}; f = 1 \text{ MHz}$		1000		pF
Q_{Gon}	$V_{CE} = 600 \text{ V}; V_{GE} = 15 \text{ V}; I_C = 18 \text{ A}$		70		nC
R_{thJC}				0.63	K/W

Component				
Symbol	Conditions	Maximum Ratings		
T_{vj}		-55...+150	°C	
T_{stg}		-55...+125	°C	
Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
Weight			2	g



Dim.	Millimeter		Inches	
	min	max	min	max
A	4.06	4.83	0.160	0.190
A1	typ. 0.10		typ. 0.004	
b	0.51	0.99	0.020	0.039
b2	1.14	1.40	0.045	0.055
c	0.40	0.74	0.016	0.029
c2	1.14	1.40	0.045	0.029
D	8.38	9.40	0.330	0.370
D1	8.00	8.89	0.315	0.350
E	9.65	10.41	0.380	0.410
E1	6.22	8.20	0.245	0.323
e	2,54 BSC		0,100 BSC	
H	14.61	15.88	0.575	0.625
L	1.78	2.79	0.070	0.110
L1	1.02	1.68	0.040	0.066
L2	1.02	1.52	0.040	0.060
W	typ. 0.02	0.040	typ. 0.0008	0.0016

All dimensions conform with and/or are within JEDEC standard.

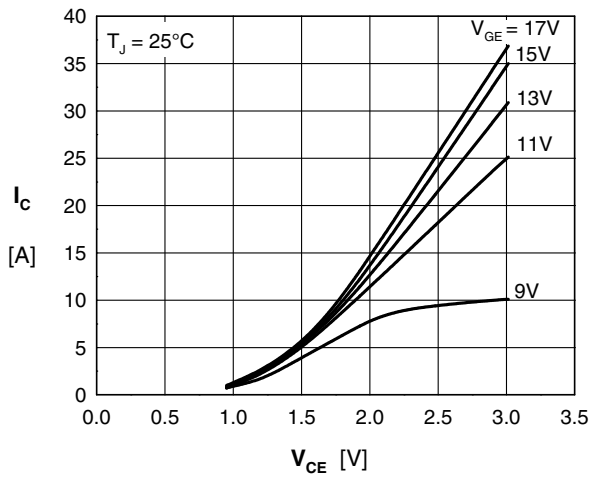


Fig. 1 Typ. output characteristics

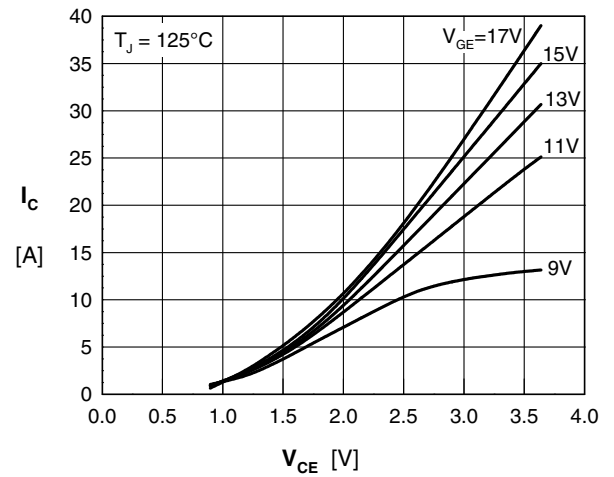


Fig. 2 Typ. output characteristics

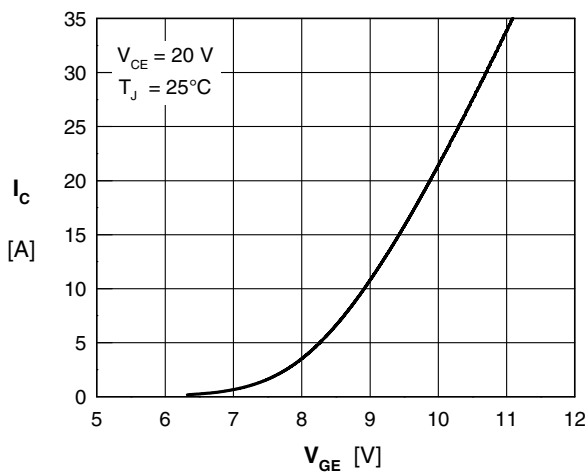


Fig. 3 Typ. transfer characteristics

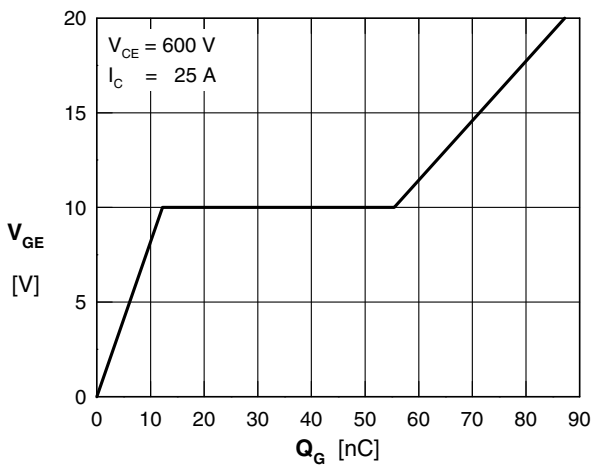


Fig. 4 Typ. turn on gate charge

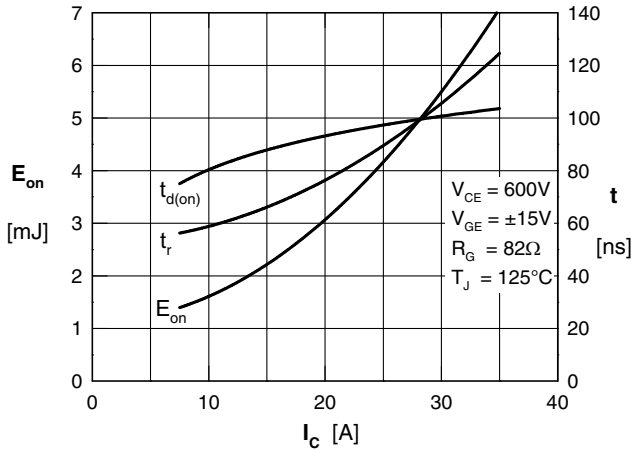


Fig. 5 Typ. turn on energy and switching times versus collector current

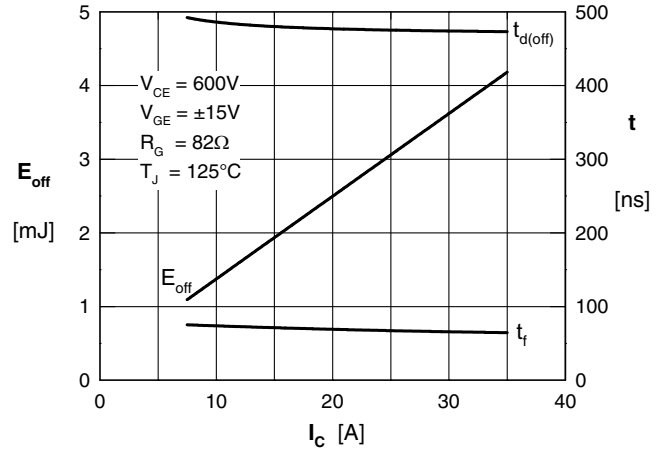


Fig. 6 Typ. turn off energy and switching times versus collector current

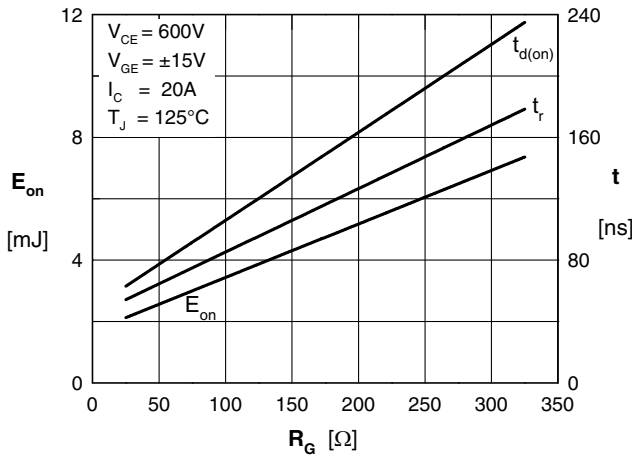


Fig. 7 Typ. turn on energy and switching times versus gate resistor

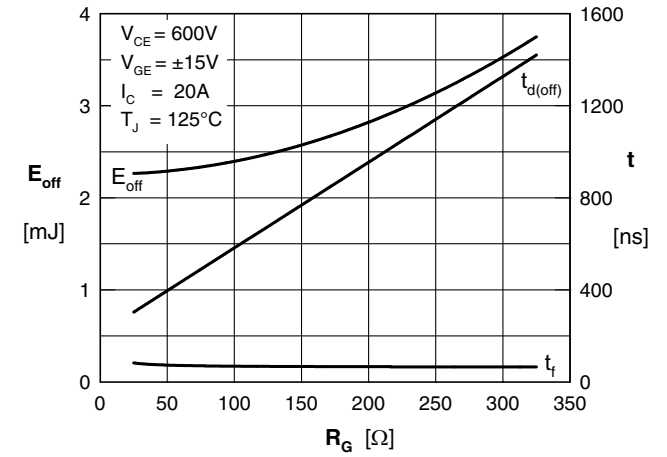


Fig.8 Typ. turn off energy and switching times versus gate resistor

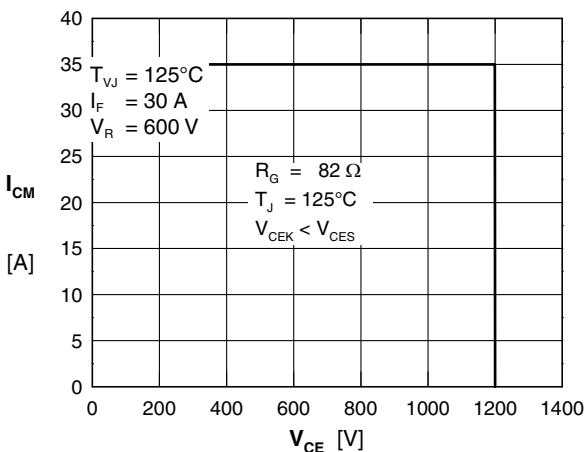


Fig. 9 Reverse biased safe operating area RBSOA

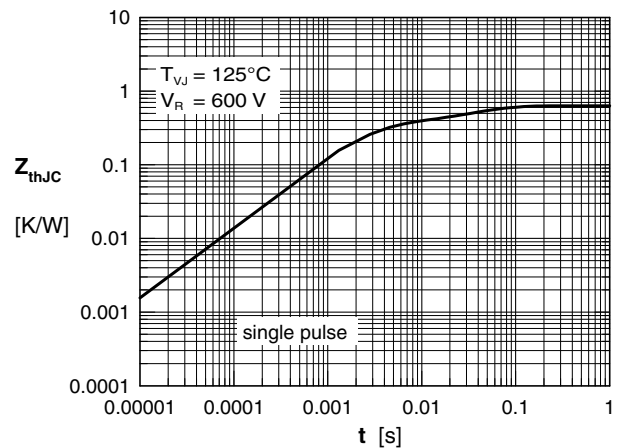


Fig. 10 Typ. transient thermal impedance