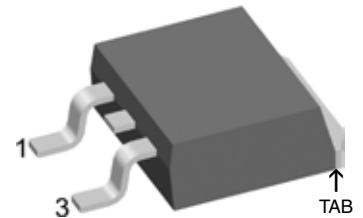
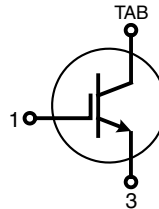


High Voltage IGBT

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

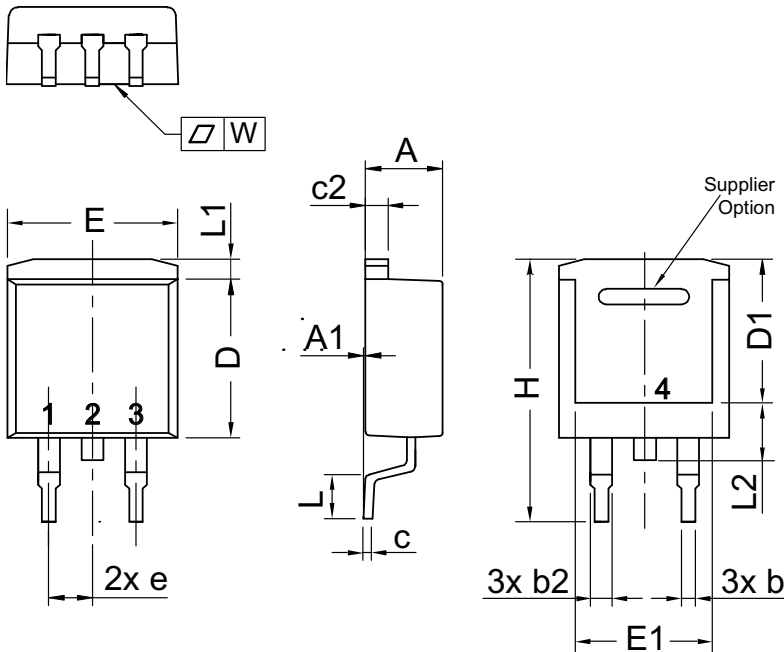
- **NPT IGBT**
 - low saturation voltage
 - positive temperature coefficient for easy paralleling
- **TO-263 package**
 - SMD assembly
 - industry standard outline

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.		
$V_{CE(sat)}$	$I_C = 20 \text{ A}; V_{GE} = 15 \text{ V};$	$T_{VJ} = 25^{\circ}\text{C}$		2.4	3.0	V
		$T_{VJ} = 125^{\circ}\text{C}$		2.6		V
$V_{GE(th)}$	$I_C = 0.6 \text{ mA}; V_{GE} = V_{CE}$	4.5		6.5	V	
I_{CES}	$V_{CE} = V_{CES}; V_{GE} = 0 \text{ V};$		0.8	0.8	mA	
	$T_{VJ} = 25^{\circ}\text{C}$				mA	
	$T_{VJ} = 125^{\circ}\text{C}$				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.

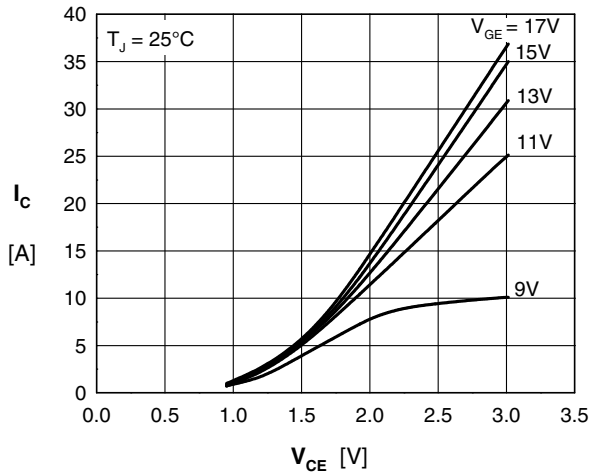


Fig. 1 Typ. output characteristics

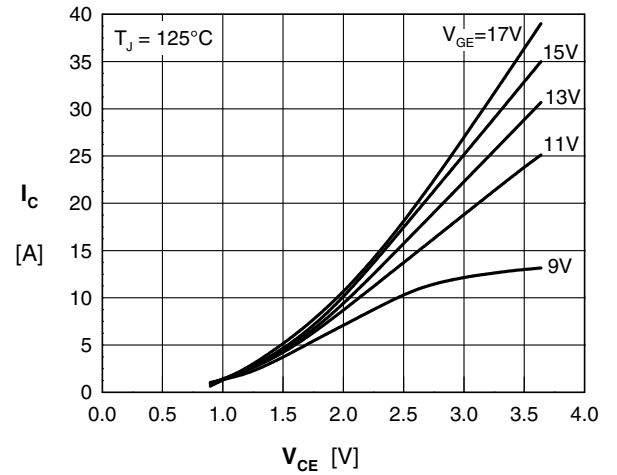


Fig. 2 Typ. output characteristics

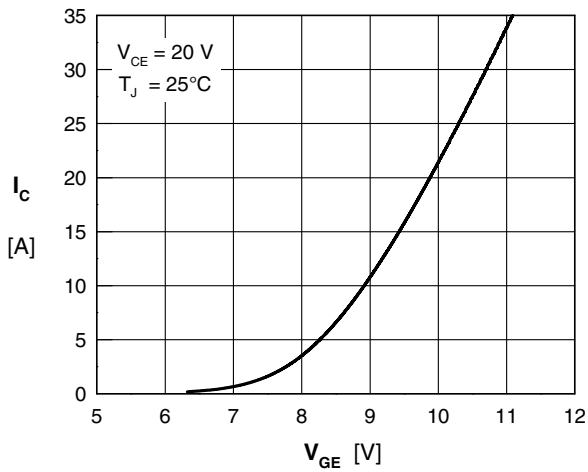


Fig. 3 Typ. transfer characteristics

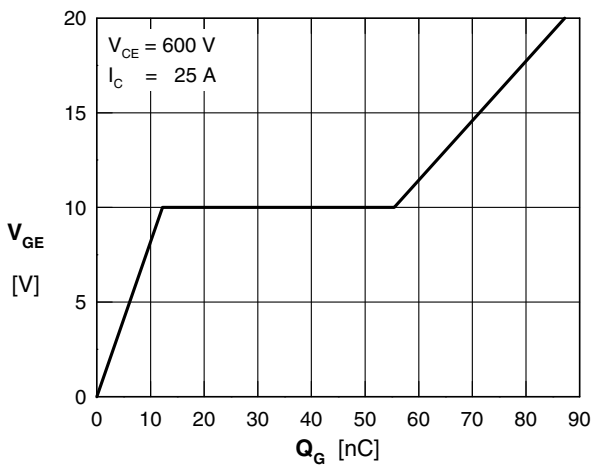


Fig. 4 Typ. turn on gate charge

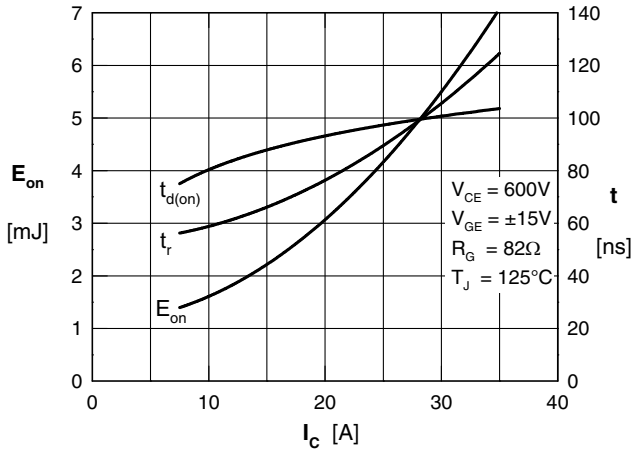


Fig. 5 Typ. turn on energy and switching times versus collector current

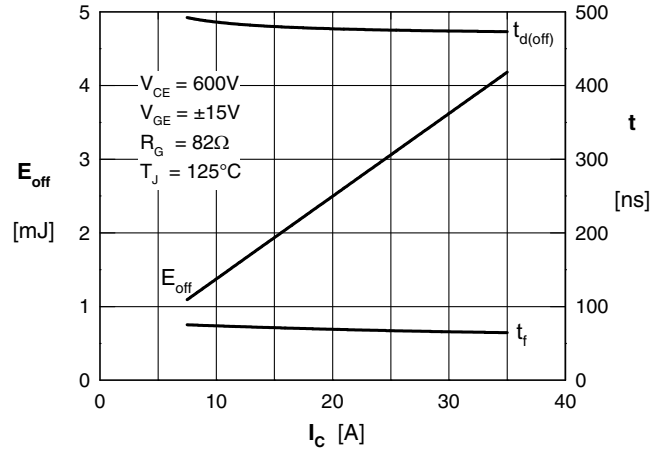


Fig. 6 Typ. turn off energy and switching times versus collector current

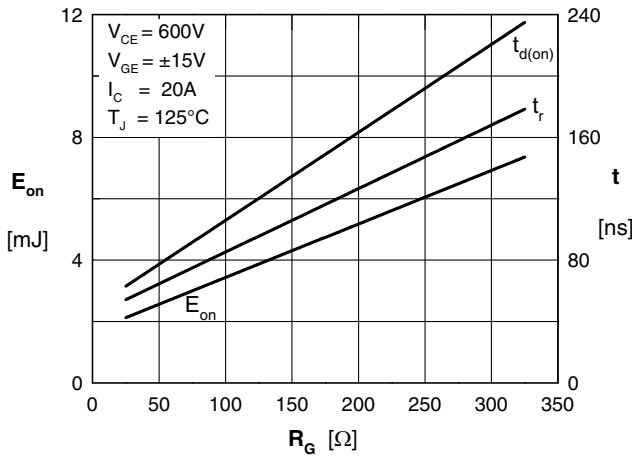


Fig. 7 Typ. turn on energy and switching times versus gate resistor

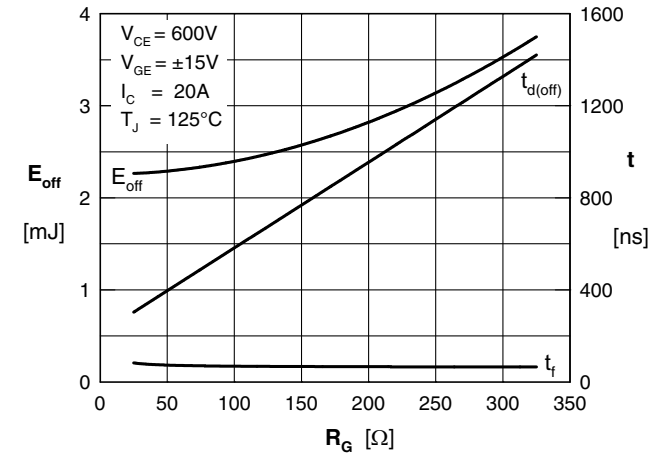


Fig.8 Typ. turn off energy and switching times versus gate resistor

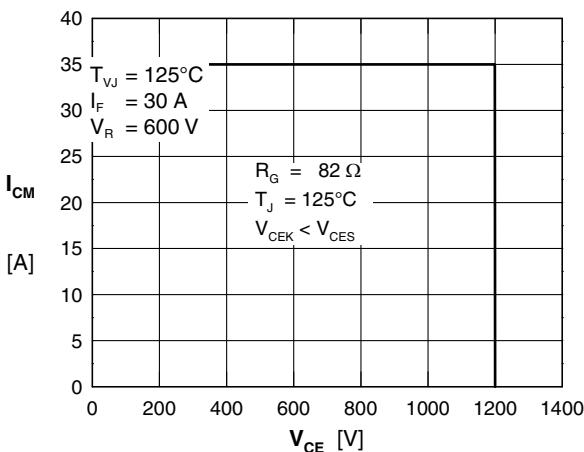


Fig. 9 Reverse biased safe operating area RBSOA

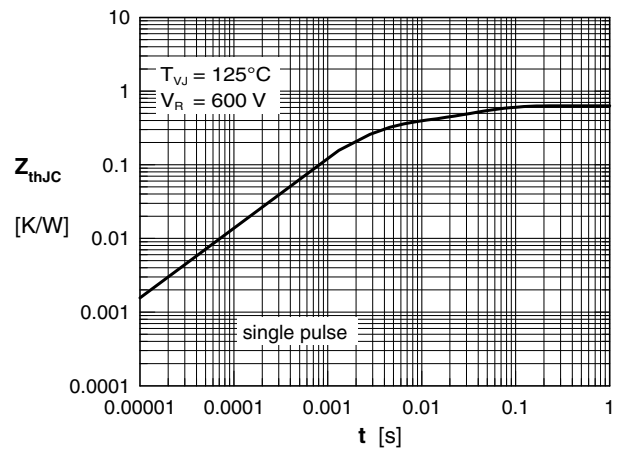


Fig. 10 Typ. transient thermal impedance



Disclaimer Notice - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.