

High Voltage IGBT

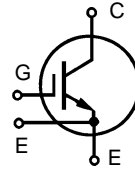
IXDN 75N120

$$V_{CES} = 1200 \text{ V}$$

$$I_{C25} = 150 \text{ A}$$

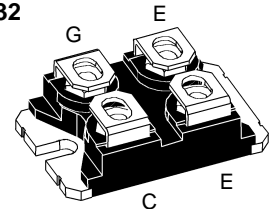
$$V_{CE(sat) \text{ typ}} = 2.2 \text{ V}$$

Short Circuit SOA Capability
Square RBSOA



miniBLOC, SOT-227 B

E153432



E = Emitter ①, C = Collector
G = Gate, E = Emitter ①

① Either Emitter terminal can be used as Main or Kelvin Emitter

Symbol	Conditions	Maximum Ratings	
V_{CES}	$T_J = 25^\circ\text{C}$ to 150°C	1200	V
V_{CGR}	$T_J = 25^\circ\text{C}$ to 150°C ; $R_{GE} = 20 \text{ k}\Omega$	1200	V
V_{GES}	Continuous	± 20	V
V_{GEM}	Transient	± 30	V
I_{C25}	$T_C = 25^\circ\text{C}$	150	A
I_{C90}	$T_C = 90^\circ\text{C}$	95	A
I_{CM}	$T_C = 90^\circ\text{C}$, $t_p = 1 \text{ ms}$	190	A
RBSOA	$V_{GE} = \pm 15 \text{ V}$, $T_J = 125^\circ\text{C}$, $R_G = 15 \Omega$ Clamped inductive load, $L = 30 \mu\text{H}$	$I_{CM} = 150$ $V_{CEK} < V_{CES}$	A
t_{SC} (SCSOA)	$V_{GE} = \pm 15 \text{ V}$, $V_{CE} = V_{CES}$, $T_J = 125^\circ\text{C}$ $R_G = 15 \Omega$, non repetitive	10	μs
P_C	$T_C = 25^\circ\text{C}$ IGBT	660	W
V_{ISOL}	50/60 Hz; $I_{ISOL} \leq 1 \text{ mA}$	2500	V~
T_J		-40 ... +150	$^\circ\text{C}$
T_{stg}		-40 ... +150	$^\circ\text{C}$
M_d	Mounting torque	1.5/13	Nm/lb.in.
	Terminal connection torque (M4)	1.5/13	Nm/lb.in.
Weight		30	g

Features

- NPT IGBT technology
- low saturation voltage
- low switching losses
- square RBSOA, no latch up
- high short circuit capability
- positive temperature coefficient for easy paralleling
- MOS input, voltage controlled
- International standard package miniBLOC

Advantages

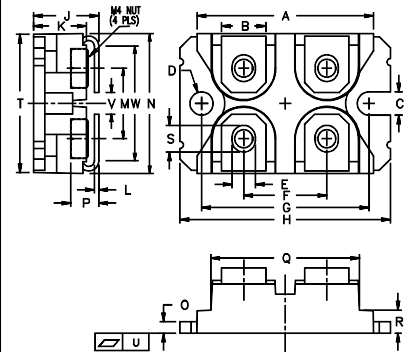
- Space savings
- Easy to mount with 2 screws
- High power density

Typical Applications

- AC motor speed control
- DC servo and robot drives
- DC choppers
- Uninterruptible power supplies (UPS)
- Switch-mode and resonant-mode power supplies

Symbol	Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
$V_{(BR)CES}$	$V_{GE} = 0 \text{ V}$	1200		V
$V_{GE(th)}$	$I_C = 3 \text{ mA}$, $V_{CE} = V_{GE}$	4.5		6.5 V
I_{CES}	$V_{CE} = V_{CES}$ $T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$		6	4 mA mA
I_{GES}	$V_{CE} = 0 \text{ V}$, $V_{GE} = \pm 20 \text{ V}$			$\pm 500 \text{ nA}$
$V_{CE(sat)}$	$I_C = 75 \text{ A}$, $V_{GE} = 15 \text{ V}$	2.2	2.7	V

Symbol	Conditions	Characteristic Values		
		(T _J = 25°C, unless otherwise specified)		
		min.	typ.	max.
C _{ies}	V _{CE} = 25 V, V _{GE} = 0 V, f = 1 MHz		5500	pF
C _{oes}			750	pF
C _{res}			330	pF
Q _g	I _C = 75 A, V _{GE} = 15 V, V _{CE} = 0.5 V _{CES}		360	nC
t _{d(on)}	Inductive load, T _J = 125°C I _C = 75 A, V _{GE} = ±15 V, V _{CE} = 600 V, R _G = 15 Ω		100	ns
t _r			50	ns
t _{d(off)}			650	ns
t _f			50	ns
E _{on}			12.1	mJ
E _{off}		10.5	mJ	
R _{thJC}	Package with heatsink compound		0.1	0.19 K/W
R _{thCK}				K/W

miniBLOC, SOT-227 B


M4 screws (4x) supplied

Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	31.50	31.88	1.240	1.255
B	7.80	8.20	0.307	0.323
C	4.09	4.29	0.161	0.169
D	4.09	4.29	0.161	0.169
E	4.09	4.29	0.161	0.169
F	14.91	15.11	0.587	0.595
G	30.12	30.30	1.186	1.193
H	37.80	38.20	1.489	1.505
J	11.68	12.22	0.460	0.481
K	8.92	9.60	0.351	0.378
L	0.76	0.84	0.030	0.033
M	12.60	12.85	0.496	0.506
N	25.15	25.42	0.990	1.001
O	1.98	2.13	0.078	0.084
P	4.95	5.97	0.195	0.235
Q	26.54	26.90	1.045	1.059
R	3.94	4.42	0.155	0.174
S	4.72	4.85	0.186	0.191
T	24.59	25.07	0.968	0.987
U	-0.05	0.1	-0.002	0.004
V	3.30	4.57	0.130	0.180
W	0.780	0.830	0.031	0.033

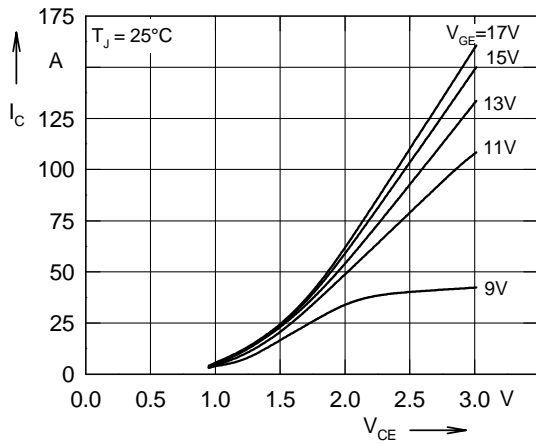


Fig. 1 Typ. output characteristics

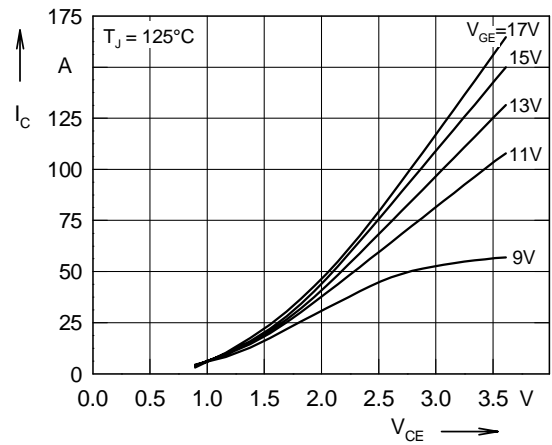


Fig. 2 Typ. output characteristics

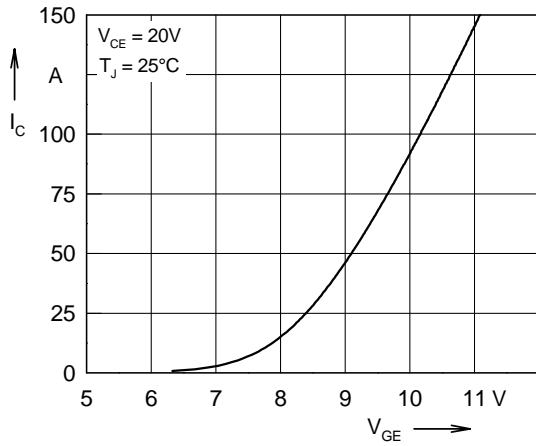


Fig. 3 Typ. transfer characteristics

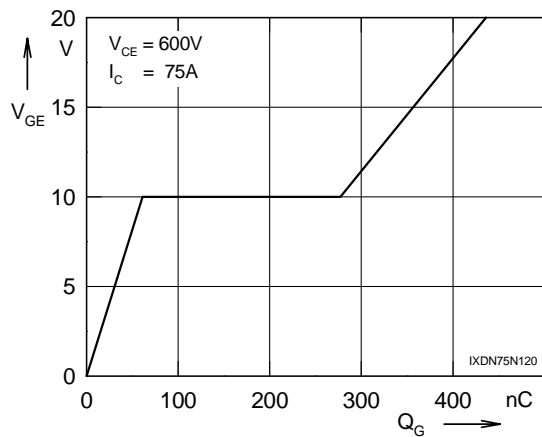


Fig. 4 Typ. turn on gate charge

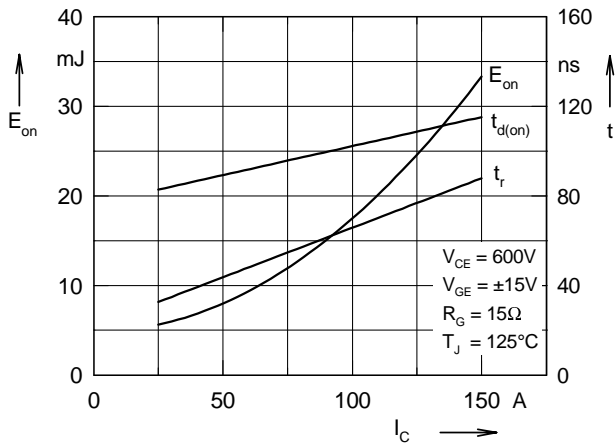


Fig. 5 Typ. turn on energy and switching times versus collector current

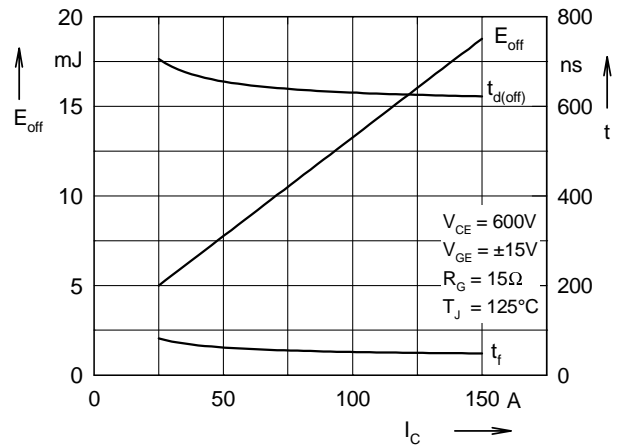


Fig. 6 Typ. turn off energy and switching times versus collector current

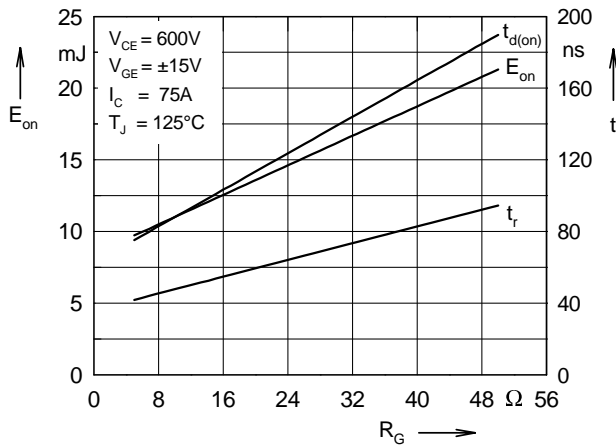


Fig. 7 Typ. turn on energy and switching times versus gate resistor

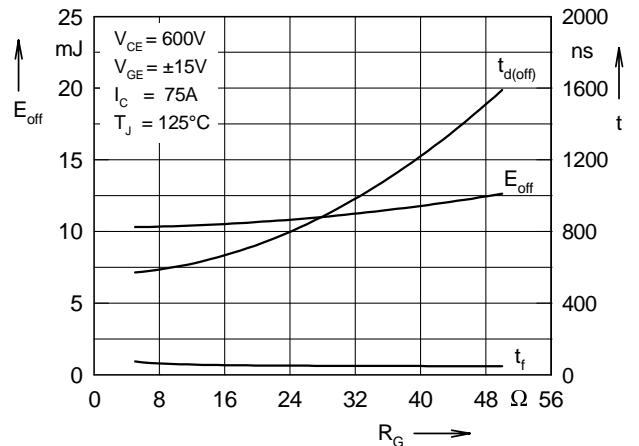


Fig.8 Typ. turn off energy and switching times versus gate resistor

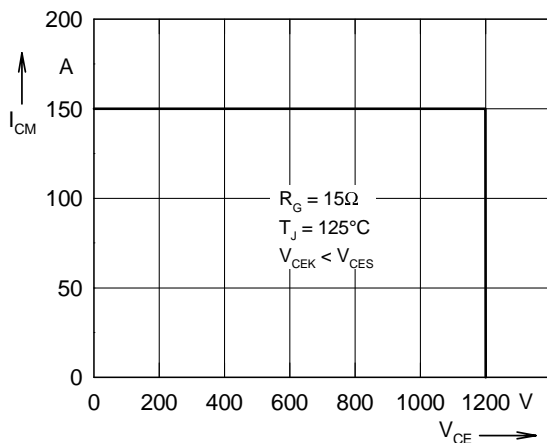


Fig. 9 Reverse biased safe operating area RBSOA

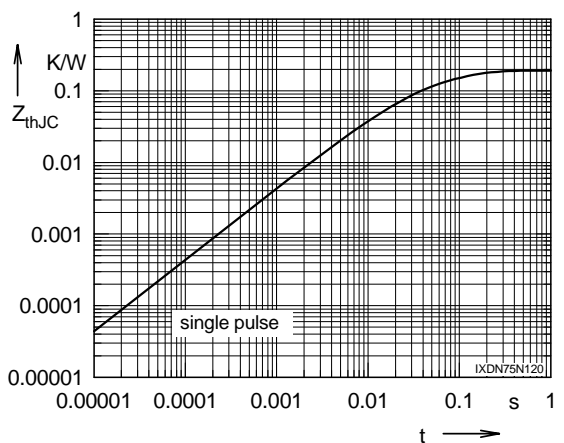


Fig. 10 Typ. transient thermal impedance



LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.