



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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High Voltage IGBT

IXSN 55N120A

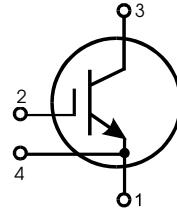
$$V_{CES} = 1200 \text{ V}$$

$$I_{C25} = 110 \text{ A}$$

$$V_{CE(sat)} = 4 \text{ V}$$

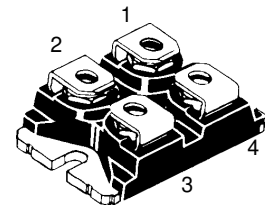
Short Circuit SOA Capability

Preliminary Data



Symbol	Test Conditions	Maximum Ratings
V_{CES}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}$	1200 V
V_{CGR}	$T_J = 25^\circ\text{C to } 150^\circ\text{C}; R_{GE} = 1 \text{ M}\Omega$	1200 A
V_{GES}	Continuous	± 20 V
V_{GEM}	Transient	± 30 V
I_{C25}	$T_C = 25^\circ\text{C}$	110 A
I_{C90}	$T_C = 90^\circ\text{C}$	55 A
I_{CM}	$T_C = 25^\circ\text{C}, 1 \text{ ms}$	160 A
SSOA (RBSOA)	$V_{GE} = 15 \text{ V}, T_{VJ} = 125^\circ\text{C}, R_G = 22 \Omega$ Clamped inductive load, $L = 30 \mu\text{H}$	$I_{CM} = 110$ @ $0.8 V_{CES}$ A
t_{SC} (SCSOA)	$V_{GE} = 15 \text{ V}, V_{CE} = 0.6 V_{CES}, T_J = 125^\circ\text{C}$ $R_G = 22 \Omega$, non-repetitive	10 μs
P_C	$T_C = 25^\circ\text{C}$ IGBT	500 W
V_{ISOL}	50/60 Hz $t = 1 \text{ min}$ $I_{ISOL} \leq 1 \text{ mA}$ $t = 1 \text{ s}$	2500 V~ 3000 V~
T_J		-55 ... +150 $^\circ\text{C}$
T_{JM}		150 $^\circ\text{C}$
T_{stg}		-55 ... +150 $^\circ\text{C}$
M_d	Mounting torque Terminal connection torque (M4)	1.5/13 Nm/lb.in. 1.5/13 Nm/lb.in.
Weight		30 g

miniBLOC, SOT-227 B



1 = Emitter ① 3 = Collector
2 = Gate 4 = Emitter ①

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

Features

- International standard package miniBLOC
- Aluminium-nitride isolation
 - high power dissipation
- Isolation voltage 3000 V~
- UL registered E 153432
- Low $V_{CE(sat)}$
 - for minimum on-state conduction losses
- Low collector-to-case capacitance (<100 pF)
 - reduces RFI
- Low package inductance (< 10 nH)
 - easy to drive and to protect

Applications

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

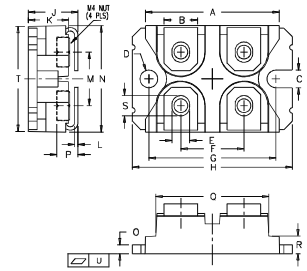
Advantages

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

Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		Min.	Typ.	Max.
BV_{CES}	$I_C = 6 \text{ mA}, V_{GE} = 0 \text{ V}$	1200		V
$V_{GE(th)}$	$I_C = 8 \text{ mA}, V_{CE} = V_{GE}$	4		V
I_{CES}	$V_{CE} = 0.8 V_{CES}$ $V_{GE} = 0 \text{ V}$		$T_J = 25^\circ\text{C}$ $T_J = 125^\circ\text{C}$	1 mA 2.5 mA
I_{GES}	$V_{CE} = 0 \text{ V}, V_{GE} = \pm 20 \text{ V}$			± 200 nA
$V_{CE(sat)}$	$I_C = I_{C90}, V_{GE} = 15 \text{ V}$			4 V

Symbol	Test Conditions	Characteristic Values ($T_J = 25^\circ\text{C}$, unless otherwise specified)		
		Min.	Typ.	Max.
g_{fs}	$I_C = I_{C90}$; $V_{CE} = 10\text{ V}$ Pulse test, $t \leq 300\ \mu\text{s}$, duty cycle $d \leq 2\%$	32	45	S
$I_{C(on)}$	$V_{CE} = 10\text{ V}$, $V_{GE} = 15\text{ V}$		340	A
C_{ies}	$V_{CE} = 25\text{ V}$, $V_{GE} = 0\text{ V}$, $f = 1\text{ MHz}$		8000	pF
C_{oes}			590	pF
C_{res}			120	pF
Q_g	$I_C = I_{C90}$, $V_{GE} = 15\text{ V}$, $V_{CE} = 0.5 V_{CES}$		300	nC
Q_{ge}			80	nC
Q_{gc}			140	nC
$t_{d(on)}$	Inductive load, $T_J = 25^\circ\text{C}$ $I_C = I_{C90}$, $V_{GE} = 15\text{ V}$, $V_{CE} = 0.8 V_{CES}$, $R_G = 2.7\ \Omega$ Remarks: Switching times may increase for V_{CE} (Clamp) $> 0.8 V_{CES}$, higher T_J or increased R_G		140	ns
t_{ri}			220	ns
$t_{d(off)}$			400	ns
t_{fi}			700	1000 ns
E_{off}			18	mJ
$t_{d(on)}$	Inductive load, $T_J = 125^\circ\text{C}$ $I_C = I_{C90}$, $V_{GE} = 15\text{ V}$, $V_{CE} = 0.8 V_{CES}$, $R_G = 2.7\ \Omega$ Remarks: Switching times may increase for V_{CE} (Clamp) $> 0.8 V_{CES}$, higher T_J or increased R_G		140	ns
t_{ri}			250	ns
$t_{d(off)}$			600	ns
t_{si}			900	ns
t_c			950	ns
$E_{(on)}$			6	mJ
E_{off}			25	mJ
R_{thJC}			0.25	K/W
R_{thCK}		0.05		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	38.00	38.23	1.496	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