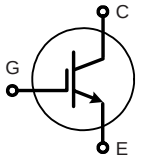
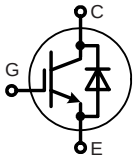
NPT³ IGBT
in miniBLOC package

IXEN 60N120
IXEN 60N120D1

I_{C25} = 100 A
V_{CES} = 1200 V
$V_{CE(sat)\,typ.}$ = 2.1 V

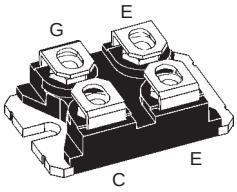


IXEN 60N120



IXEN 60N120D1

miniBLOC, SOT-227 B
E153432



C = Collector
G = Gate
E = Emitter *

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

IGBT

Symbol	Conditions	Maximum Ratings	
V_{CES}	T_{VJ} = 25°C to 150°C	1200	V
V_{GES}		± 20	V
I_{C25}	T_C = 25°C	100	A
I_{C90}	T_C = 90°C	65	A
I_{CM}	V_{GE} = ±15 V; R_G = 22 Ω; T_{VJ} = 125°C	100	A
V_{CEK}	RBSOA, Clamped inductive load; L = 100 µH	V_{CES}	
t_{SC} (SCSOA)	V_{CE} = 900 V; V_{GE} = ±15 V; R_G = 22 Ω; T_{VJ} = 125°C non-repetitive	10	µs
P_{tot}	T_C = 25°C	445	W

Symbol	Conditions	Characteristic Values (T_{VJ} = 25°C, unless otherwise specified) min.	typ.	max.	
$V_{CE(sat)}$	I_C = 60 A; V_{GE} = 15 V; T_{VJ} = 25°C		2.1	2.7	V
	T_{VJ} = 125°C		2.5		V
$V_{GE(th)}$	I_C = 2 mA; V_{GE} = V_{CE}	4.5		6.5	V
I_{CES}	V_{CE} = V_{CES}; V_{GE} = 0 V; T_{VJ} = 25°C			0.1	mA
	T_{VJ} = 125°C		0.1		mA
I_{GES}	V_{CE} = 0 V; V_{GE} = ± 20 V			200	nA
$t_{d(on)}$	Inductive load, T_{VJ} = 125°C		150		ns
t_r	V_{CE} = 600 V; I_C = 60 A		60		ns
$t_{d(off)}$	V_{GE} = ±15 V; R_G = 22 Ω		700		ns
t_f			50		ns
E_{on}			7.2		mJ
E_{off}			6.0		mJ
C_{ies}	V_{CE} = 25 V; V_{GE} = 0 V; f = 1 MHz		3.8		nF
Q_{Gon}	V_{CE} = 600 V; V_{GE} = 15 V; I_C = 50 A		500		nC
R_{thJC}				0.28	K/W

Features

- NPT³ IGBT
  - low saturation voltage
  - positive temperature coefficient for easy paralleling
  - fast switching
  - short tail current for optimized performance in resonant circuits
- miniBLOC package
  - isolated copper base plate
  - screw terminals
  - kelvin emitter terminal for easy drive
  - industry standard outline

Applications

- single switches
and with complementary free wheeling diodes
- choppers
- phaselegs, H bridges, three phase bridges e.g. for
  - power supplies, UPS
  - AC, DC and SR drives
  - induction heating

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Diode (D1 version only)

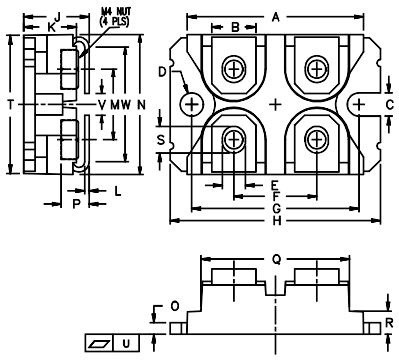
Symbol	Conditions	Characteristic Values (T_J = 25°C, unless otherwise specified) min.	typ.	max.	
V_F	I_F = 55 A, V_{GE} = 0 V		2.4	2.6	V
	I_F = 55 A, V_{GE} = 0 V, T_J = 125°C		1.9		V
I_F	T_C = 25°C			110	A
	T_C = 90°C			60	A
I_{RM}	I_F = 55 A, -di$_F$/dt = 400 A/µs, V_R = 600 V		40		A
t_{rr}	V_{GE} = 0 V, T_J = 125°C		200		ns
t_{rr}	I_F = 1 A, -di$_F$/dt = 100 A/µs, V_R = 30 V, V_{GE} = 0 V		40		ns
R_{thJC}				0.6	K/W

Component

Symbol	Conditions		Maximum Ratings	
T_{VJ}			-40...+150	°C
T_{stg}			-40...+150	°C
V_{ISOL}	I_{ISOL} ≤ 1 mA; 50/60 Hz		2500	V~
M_D	mounting torque	(M4)	1.5	Nm
	teminal connection torque	(M4)	1.5	Nm

Symbol	Conditions	Characteristic Values min.	typ.	max.	
R_{thCH}	with heatsink compound		0.1		K/W
Weight			30		g

miniBLOC, SOT-227 B



M4 screws (4x) supplied

Dim.	Millimeter Min.	Max.	Inches 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	19.81	21.08