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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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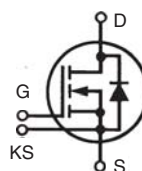
# Trench Power MOSFET

Very low  $R_{DS(on)}$

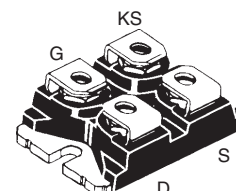
$$V_{DSS} = 100 \text{ V}$$

$$I_{D25} = 280 \text{ A}$$

$$R_{DS(on)} = 3.9 \text{ m}\Omega \text{ (typ.)}$$



SOT-227 B,  
miniBLOC



G = Gate  
S = Source

D = Drain  
KS = Kelvin Source

Symbol	Conditions	Maximum Ratings	
$V_{DSS}$	$T_J = 25^\circ\text{C to } 150^\circ\text{C}$	100	V
$V_{GS}$	Continuous	$\pm 20$	V
$V_{GSM}$	Transient	$\pm 30$	V
$I_{D25}$	$T_C = 25^\circ\text{C}$	280	A
$I_{D90}$	$T_C = 90^\circ\text{C}$	210	A
$I_{D(RMS)}$	Package lead current limit	150	A
$P_D$	$T_C = 25^\circ\text{C}$	770	W
$T_J$		-55 ... +150	$^\circ\text{C}$
$T_{JM}$		175	$^\circ\text{C}$
$T_{stg}$		-55 ... +175	$^\circ\text{C}$
$V_{ISOL}$	50/60 Hz, RMS, $t = 1 \text{ min}$ $I_{ISOL} \leq 1 \text{ mA}$ , $t = 1 \text{ s}$	2500 3000	V~ V~
$M_d$	Mounting torque Terminal connection torque	1.5/13 Nm/lb.in. 1.5/13 Nm/lb.in.	
Weight		30	g

## Features

- trench MOSFET
- very low on state resistance  $R_{DS(on)}$
- fast switching
- fast body diode
- industry standard outline
- isolated package
- high reliability

## Applications

- automotive
- converters for fuel cells
- AC drives
- choppers to replace series dropping resistors used for motors, heaters etc.
- DC-DC converters
- electronic switches
- replacing relays and fuses
- power supplies
- solar inverters
- battery supplied systems
- choppers or inverters for motor control in hand tools
- battery chargers

## Advantages

- Easy to mount
- Space savings
- High power density

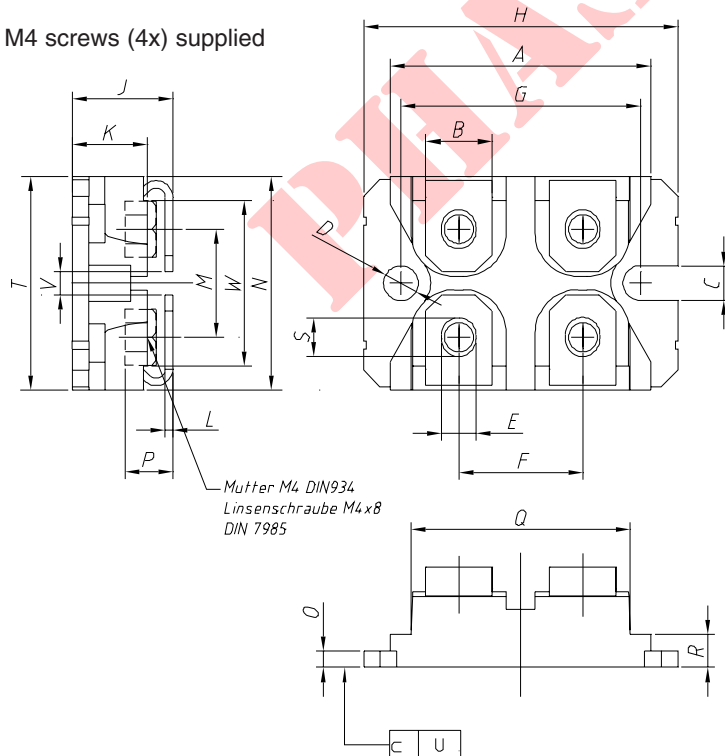
Symbol	Conditions	Characteristic Values ( $T_J = 25^\circ\text{C}$ , unless otherwise specified)		
		min.	typ.	max.
$R_{DS(on)}$	$V_{GS} = 10 \text{ V}$ , $I_D = 140 \text{ A}$ Pulse test, $t \leq 300 \mu\text{s}$ , duty cycle $d \leq 2 \%$		3.9	5 m $\Omega$
$V_{GH(th)}$	$V_{DS} = V_{GS}$ , $I_D = 4 \text{ mA}$	2		4 V
$I_{DSS}$	$V_{DS} = V_{DSS}$ , $T_J = 25^\circ\text{C}$ $V_{GS} = 0 \text{ V}$ , $T_J = 125^\circ\text{C}$			400 $\mu\text{A}$ 2 mA
$I_{GSS}$	$V_{GS} = \pm 20 \text{ V}_{DC}$ , $V_{DS} = 0$			$\pm 400 \text{ nA}$

Symbol	Conditions	Characteristic Values		
		(T <sub>J</sub> = 25°C, unless otherwise specified)		
		min.	typ.	max.
<b>g<sub>fs</sub></b>	V <sub>DS</sub> = 10 V, I <sub>D</sub> = 100 A, pulse test		220	S
<b>C<sub>iss</sub></b>	V <sub>GS</sub> = 0 V, V <sub>DS</sub> = 25 V, f = 1 MHz		18	nF
<b>C<sub>oss</sub></b>			2.2	nF
<b>C<sub>rss</sub></b>			1.2	nF
<b>t<sub>d(on)</sub></b>	V <sub>GS</sub> = 10 V, V <sub>DS</sub> = 30 V, I <sub>D</sub> = 100 A R <sub>G</sub> = 2.5 Ω (external)		35	ns
<b>t<sub>r</sub></b>			85	ns
<b>t<sub>d(off)</sub></b>			150	ns
<b>t<sub>f</sub></b>			70	ns
<b>Q<sub>g(on)</sub></b>	V <sub>GS</sub> = 10 V, V <sub>DS</sub> = 80 V, I <sub>D</sub> = 100 A		440	nC
<b>Q<sub>gs</sub></b>			75	nC
<b>Q<sub>gd</sub></b>			180	nC
<b>R<sub>thJC</sub></b>	with heat transfer paste			0.19 K/W
<b>R<sub>thCH</sub></b>			0.05	K/W

Source-Drain Diode		Characteristic Values		
		(T <sub>J</sub> = 25°C, unless otherwise specified)		
Symbol	Conditions	min.	typ.	max.
<b>I<sub>S</sub></b>	V <sub>GS</sub> = 0 V			380 A
<b>I<sub>SM</sub></b>	Repetitive, pulse width limited by T <sub>JM</sub>			570 A
<b>V<sub>SD</sub></b>	I <sub>F</sub> = 280 A, V <sub>GS</sub> = 0 V, Pulse test, t ≤ 300 μs, duty cycle d ≤ 2 %			1.70 V
<b>t<sub>rr</sub></b>	I <sub>F</sub> = 300 A, V <sub>R</sub> = 30 V -di/dt = 400 A/μs		80	ns
<b>I<sub>RM</sub></b>			35	A

## 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	.307	.323
C	4.09	4.29	.161	.169
D	4.09	4.29	.161	.169
E	4.09	4.29	.161	.169
F	14.91	15.11	.587	.595
G	30.12	30.30	1.186	1.193
H	37.80	38.23	1.489	1.505
J	11.68	12.22	.460	.481
K	8.92	9.60	.351	.378
L	0.76	0.84	.030	.033
M	12.60	12.85	.496	.506
N	25.15	25.42	.990	1.001
O	1.98	2.13	.078	.084
P	4.95	5.97	.195	.235
Q	26.54	26.90	1.045	1.059
R	3.94	4.42	.155	.174
S	4.72	4.85	.186	.191
T	24.59	25.07	.968	.987
U	-0.05	0.10	-.002	.004
V	3.30	4.57	.130	.180
W	19.81	21.08	.780	.830

IXYS reserves the right to change limits, test conditions, and dimensions.

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