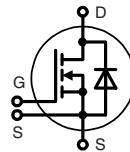


CoolMOS™¹⁾ Power MOSFET

N-Channel Enhancement Mode
Low $R_{DS(on)}$, High V_{DSS} MOSFET

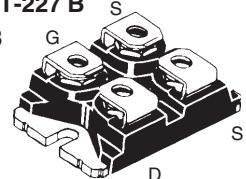
Preliminary data

V_{DSS}	I_{D25}	$R_{DS(on)}$
600 V	40 A	70 mΩ



miniBLOC, SOT-227 B

E72873



G = Gate

D = Drain

S = Source

Either source terminal at miniBLOC can be used as main or kelvin source

MOSFET

Symbol	Conditions	Maximum Ratings		
V_{DSS}	$T_{VJ} = 25^\circ\text{C}$ to 150°C	600		V
V_{GS}		± 20		V
I_{D25}	$T_c = 25^\circ\text{C}$	40		A
I_{D90}	$T_c = 90^\circ\text{C}$	27		A
dv/dt	$V_{DS} < V_{DSS}$; $I_F \leq 47$ A; $ di_F/dt \leq 100$ A/ μs $T_{VJ} = 150^\circ\text{C}$	6	V/ns	
E_{AS}	$I_D = 10$ A; $L = 36$ mH; $T_c = 25^\circ\text{C}$	1.8		J
E_{AR}	$I_D = 20$ A; $L = 5$ μH ; $T_c = 25^\circ\text{C}$	1		mJ

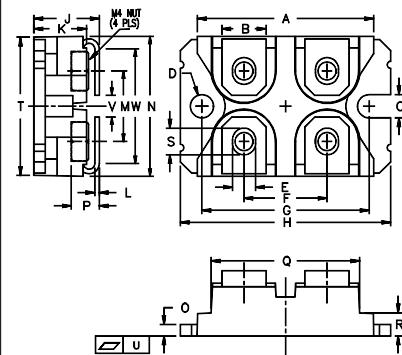
Symbol	Conditions	Characteristic Values		
		($T_{VJ} = 25^\circ\text{C}$, unless otherwise specified)		
		min.	typ.	max.
$R_{DS(on)}$	$V_{GS} = 10$ V; $I_D = 0.5 \cdot I_{D25}$	60	70	mΩ
V_{GSth}	$V_{DS} = 20$ V; $I_D = 2.5$ mA;	2.1		V
I_{DSS}	$V_{DS} = V_{DSS}$; $V_{GS} = 0$ V; $T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$	50	25	μA
I_{GSS}	$V_{GS} = \pm 20$ V; $V_{DS} = 0$ V		100	nA
Q_g Q_{gs} Q_{gd}	$\left. \begin{array}{l} V_{GS}=10 \text{ V}; V_{DS}=350 \text{ V}; I_D=50 \text{ A} \\ \end{array} \right\}$	250 25 120		nC
$t_{d(on)}$ t_r $t_{d(off)}$ t_f	$\left. \begin{array}{l} V_{GS}=10 \text{ V}; V_{DS}=380 \text{ V}; \\ I_D=50 \text{ A}; R_G=1.8 \Omega \end{array} \right\}$	20 30 110 10		ns
V_F	(reverse conduction) $I_F = 20$ A; $V_{GS} = 0$ V	0.9	1.1	V
R_{thJC}			0.43	K/W

¹⁾ CoolMOS™ is a trademark of Infineon Technologies AG.

Component

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

Symbol	Conditions	Characteristic Values		
		min.	typ.	max.
R_{thCH}	with heatsink compound	0.05		K/W
Weight		30		g

miniBLOC, SOT-227 B

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	19.81	21.08