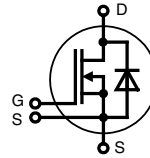


CoolMOS™ 1) Power MOSFET

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

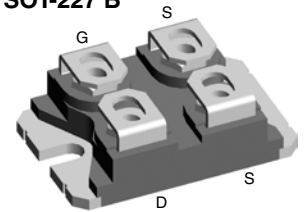
$V_{DSS} = 800\text{ V}$
 $I_{D25} = 44\text{ A}$
 $R_{DS(on)\text{ max}} = 74\text{ m}\Omega$



miniBLOC, SOT-227 B

E72873

G = Gate
S = Source
D = Drain



Either source terminal at miniBLOC can be used as main or Kelvin Source

MOSFET			
Symbol	Conditions	Maximum Ratings	
V_{DSS}	$T_{VJ} = 25^\circ\text{C}$	800	V
V_{GS}		± 20	V
I_{D25}	$T_C = 25^\circ\text{C}$	44	A
I_{D90}	$T_C = 90^\circ\text{C}$	30	A
dv/dt	$V_{DS} < V_{DSS}$; $I_F = 17\text{ A}$; $ di_F/dt < 100\text{ A}\mu\text{s}$	6	V/ns
E_{AS}	$I_D = 4\text{ A}$; $L = 80\text{ mH}$; $T_C = 25^\circ\text{C}$	670	mJ
E_{AR}	$I_D = 17\text{ A}$; $L = 3\text{ mH}$; $T_C = 25^\circ\text{C}$	0.5	mJ

Features

- miniBLOC package
 - Electrically isolated copper base
 - Low coupling capacitance to the heatsink for reduced EMI
 - International standard package SOT-227
 - Easy screw assembly
- CoolMOS™ 1) power MOSFET 3rd generation
 - high blocking capability
 - lowest resistance
 - avalanche rated for unclamped inductive switching (UIS)
 - low thermal resistance due to reduced chip thickness
- fast CoolMOS™ 1) power MOSFET 3rd generation
 - High blocking capability
 - Low on resistance
 - Avalanche rated for unclamped inductive switching (UIS)
 - Low thermal resistance due to reduced chip thickness
- Enhanced total power density

Symbol	Conditions	Characteristic Values				
		$(T_{VJ} = 25^\circ\text{C}, \text{ unless otherwise specified})$				
		min.	typ.	max.		
$R_{DS(on)}$	$V_{GS} = 10\text{ V}$; $I_D = I_{25}$		63	74	m Ω	
$V_{GS(th)}$	$V_{GS} = V_{DS}$; $I_D = 4\text{ mA}$	2.1		3.9	V	
I_{DSS}	$V_{DS} = V_{DSS}$; $V_{GS} = 0\text{ V}$; $T_{VJ} = 25^\circ\text{C}$ $T_{VJ} = 125^\circ\text{C}$		200	50	μA μA	
I_{GSS}	$V_{GS} = \pm 20\text{ V}$; $V_{DS} = 0\text{ V}$			400	nA	
Q_g Q_{gs} Q_{gd}	$V_{GS} = 10\text{ V}$; $V_{DS} = 640\text{ V}$; $I_D = 70\text{ A}$		360		nC	
			48		nC	
			184		nC	
$t_{d(on)}$ t_r $t_{d(off)}$ t_f	$V_{GS} = 10\text{ V}$; $V_{DS} = 400\text{ V}$ $I_D = 70\text{ A}$; $R_G = 1.2\text{ }\Omega$; $T_{VJ} = 125^\circ\text{C}$		25		ns	
				15		ns
				75		ns
				10		ns
R_{thJC}				0.33	K/W	

Applications

- Switched mode power supplies (SMPS)
- Uninterruptible power supplies (UPS)
- Power factor correction (PFC)
- Welding
- Inductive heating

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

Source-Drain Diode

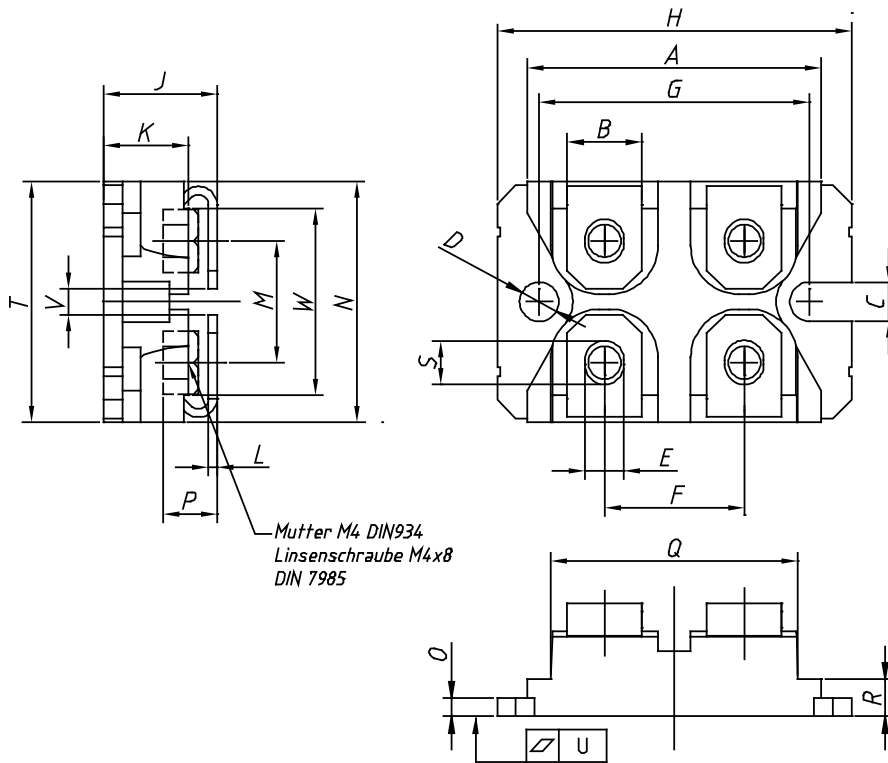
Symbol	Conditions	Characteristic Values			
		min.	typ.	max.	
($T_{VJ} = 25^{\circ}\text{C}$, unless otherwise specified)					
I_S	$V_{GS} = 0\text{ V}$			60	A
V_{SD}	$I_F = 65\text{ A}; V_{GS} = 0\text{ V}$		0.9	1.2	V
t_{rr}	$I_F = 80\text{ A}; -di_F/dt = 400\text{ A}/\mu\text{s}; V_R = 480\text{ V}$		500	800	ns
Q_{RM}			45		μC
I_{RM}			280		A

Component

Symbol	Conditions	Maximum Ratings	
T_{VJ}	operating	-55...+150	$^{\circ}\text{C}$
T_{stg}	storage	-55...+125	$^{\circ}\text{C}$
V_{ISOL}	$I_{ISOL} < 1\text{ mA}, 50/60\text{ Hz}$	2500	V~
M_d	mounting torque	1.5	Nm
	terminal connection torque	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



SYM	MILLIMETERS		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	-.05	.10	-.002	.004
V	3.30	4.57	.130	.180
W	19.81	21.08	.780	.830

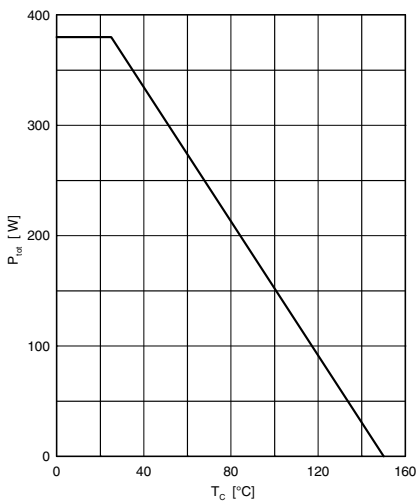


Fig. 1 Power dissipation

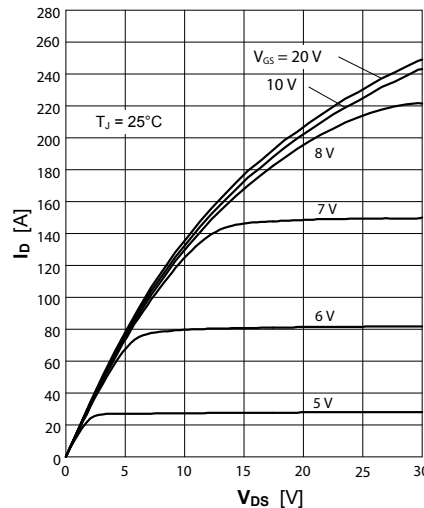


Fig. 2 Typ. output characteristics

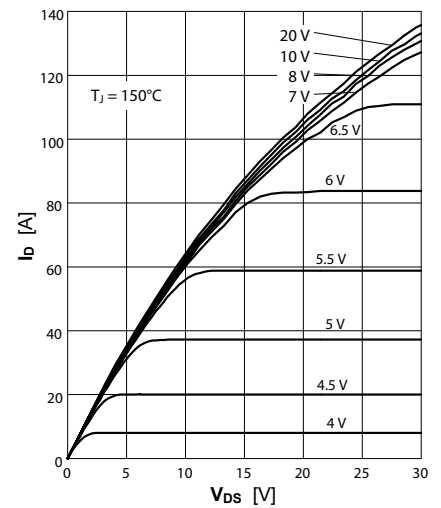


Fig. 3 Typ. output characteristics

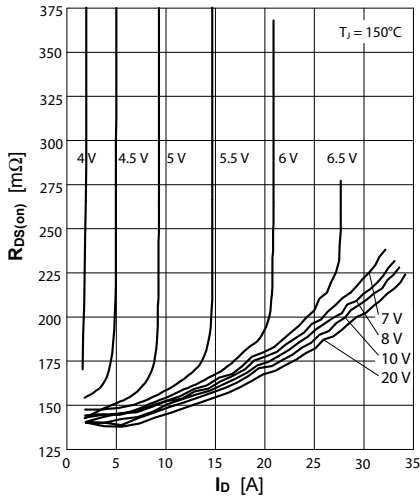


Fig. 4 Typ. drain-source on-state resistance

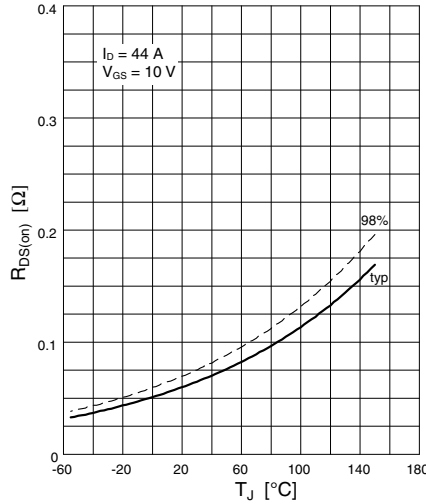


Fig. 5 Drain-source on-state resistance

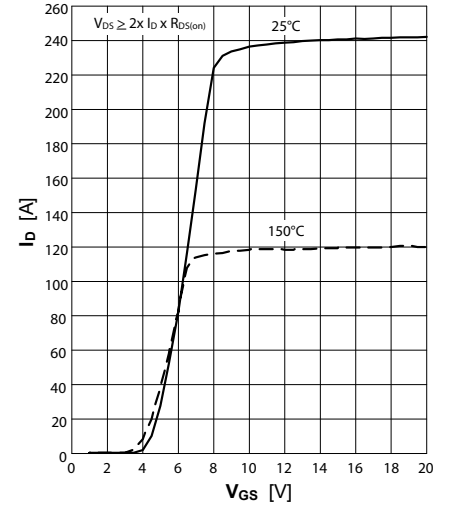


Fig. 6 Typ. transfer characteristics

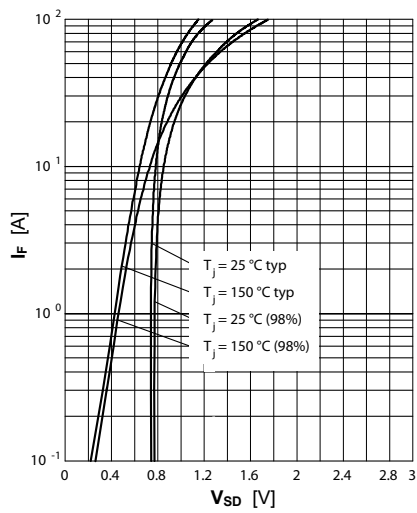


Fig. 7 Forward characteristic of reverse diode

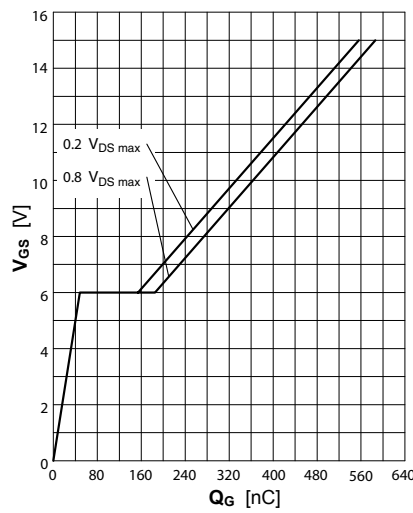


Fig. 8 Typ. gate charge

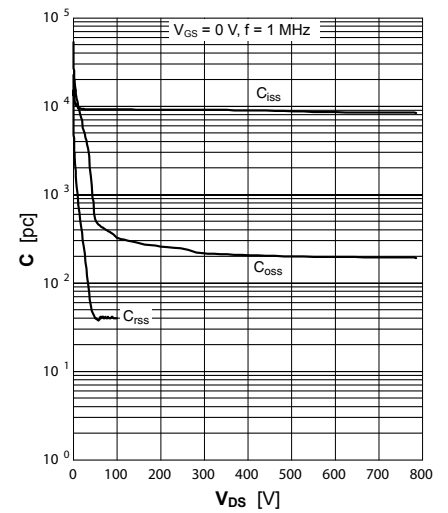


Fig. 9 Typ. capacitances

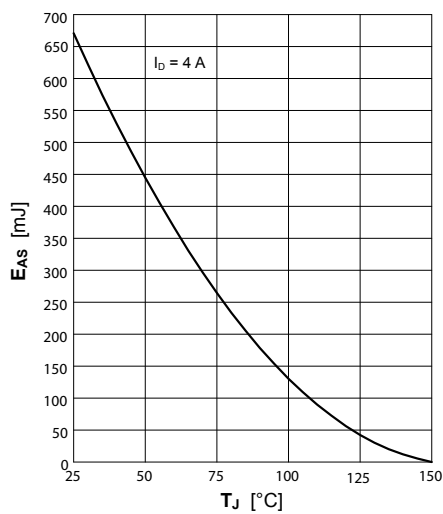


Fig. 10 Avalanche energy

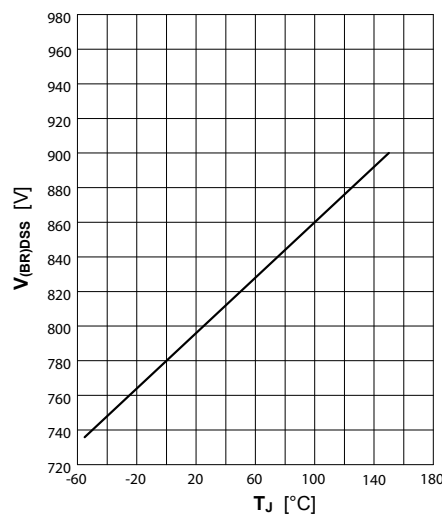


Fig. 11 Drain-source breakdown voltage



Disclaimer Notice - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.