



Schottky Diode

$V_{RRM} = 150\text{ V}$

$I_{FAV} = 2 \times 120\text{ A}$

$V_F = 0.85\text{ V}$

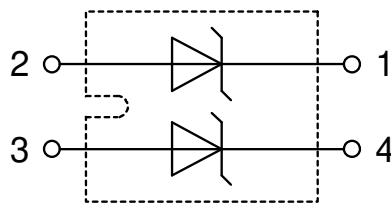
High Performance Schottky Diode
Low Loss and Soft Recovery
Parallel legs

Part number

DSA240X150NA



Backside: isolated



Features / Advantages:

- Very low V_f
- Extremely low switching losses
- Low I_{rm} values
- Improved thermal behaviour
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching

Applications:

- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Package: SOT-227B (minibloc)

- Isolation Voltage: 3000 V~
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0
- Base plate: Copper internally DCB isolated
- Advanced power cycling

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.

Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	max. non-repetitive reverse blocking voltage					150	V
V_{RRM}	max. repetitive reverse blocking voltage					150	V
I_R	reverse current, drain current	$V_R = 150\text{ V}$		$T_{VJ} = 25^\circ\text{C}$		1.5	mA
		$V_R = 150\text{ V}$		$T_{VJ} = 125^\circ\text{C}$		15	mA
V_F	forward voltage drop	$I_F = 120\text{ A}$		$T_{VJ} = 25^\circ\text{C}$		0.98	V
		$I_F = 240\text{ A}$				1.24	V
		$I_F = 120\text{ A}$		$T_{VJ} = 125^\circ\text{C}$		0.85	V
		$I_F = 240\text{ A}$				1.15	V
I_{FAV}	average forward current	$T_C = 95^\circ\text{C}$	rectangular	$T_{VJ} = 150^\circ\text{C}$		120	A
V_{F0}	threshold voltage	} for power loss calculation only		$T_{VJ} = 150^\circ\text{C}$		0.51	V
r_F	slope resistance					2.5	mΩ
R_{thJC}	thermal resistance junction to case					0.4	K/W
R_{thCH}	thermal resistance case to heatsink				0.1		K/W
P_{tot}	total power dissipation			$T_C = 25^\circ\text{C}$		310	W
I_{FSM}	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$		$T_{VJ} = 45^\circ\text{C}$		1.60	kA
C_J	junction capacitance	$V_R = 24\text{ V}$	$f = 1\text{ MHz}$	$T_{VJ} = 25^\circ\text{C}$		902	pF



Package SOT-227B (minibloc)				Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit	
I_{RMS}	RMS current	per terminal			150	A	
T_{VJ}	virtual junction temperature		-40		150	°C	
T_{op}	operation temperature		-40		125	°C	
T_{stg}	storage temperature		-40		150	°C	
Weight					30	g	
M_D	mounting torque		1.1		1.5	Nm	
M_T	terminal torque		1.1		1.5	Nm	
$d_{Spp/App}$	creepage distance on surface striking distance through air	terminal to terminal	10.5	3.2		mm	
$d_{Spb/Apb}$		terminal to backside	8.6	6.8		mm	
V_{ISOL}	isolation voltage	t = 1 second	50/60 Hz, RMS; $I_{ISOL} \leq 1$ mA	3000		V	
		t = 1 minute		2500		V	

Product Marking



Part description

- D = Diode
- S = Schottky Diode
- A = low VF
- 240 = Current Rating [A]
- X = Parallel legs
- 150 = Reverse Voltage [V]
- NA = SOT-227B (minibloc)

Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSA240X150NA	DSA240X150NA	Tube	10	511101

Similar Part	Package	Voltage class
DSS2x101-015A	SOT-227B (minibloc)	150

Equivalent Circuits for Simulation

* on die level

$T_{VJ} = 150^{\circ}C$



Schottky

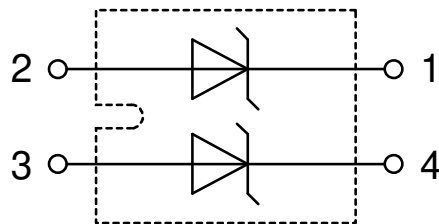
$V_{0\ max}$	threshold voltage	0.51	V
$R_{0\ max}$	slope resistance *	0.6	mΩ



Outlines SOT-227B (minibloc)



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	38.23	1.488	1.505
J	11.68	12.22	0.460	0.481
K	8.92	9.60	0.351	0.378
L	0.74	0.84	0.029	0.033
M	12.50	13.10	0.492	0.516
N	25.15	25.42	0.990	1.001
O	1.95	2.13	0.077	0.084
P	4.95	6.20	0.195	0.244
Q	26.54	26.90	1.045	1.059
R	3.94	4.42	0.155	0.167
S	4.55	4.85	0.179	0.191
T	24.59	25.25	0.968	0.994
U	-0.05	0.10	-0.002	0.004
V	3.20	5.50	0.126	0.217
W	19.81	21.08	0.780	0.830
Z	2.50	2.70	0.098	0.106





Schottky

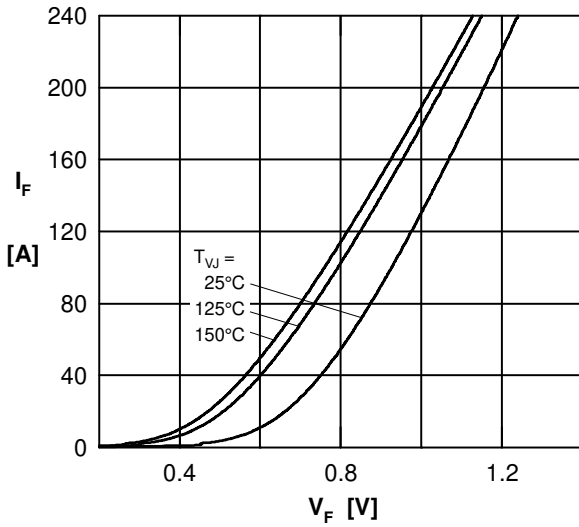


Fig. 1 Max. forward voltage drop characteristics

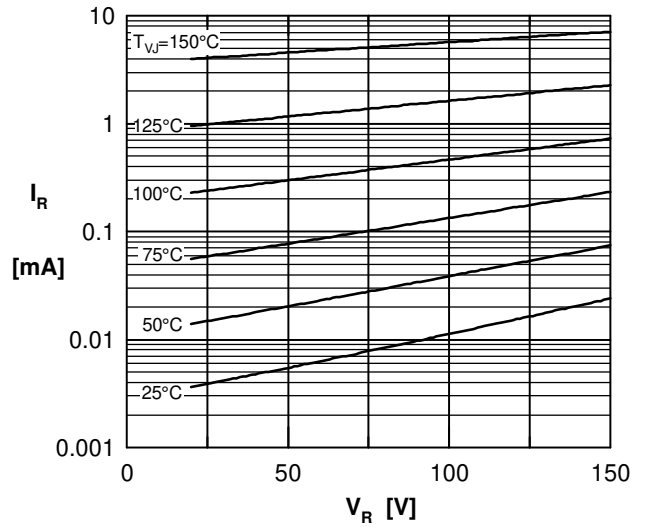


Fig. 2 Typ. reverse current I_R vs. reverse voltage V_R

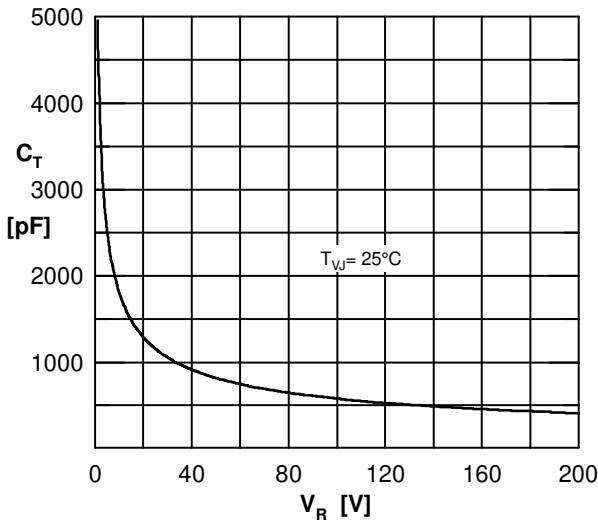


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

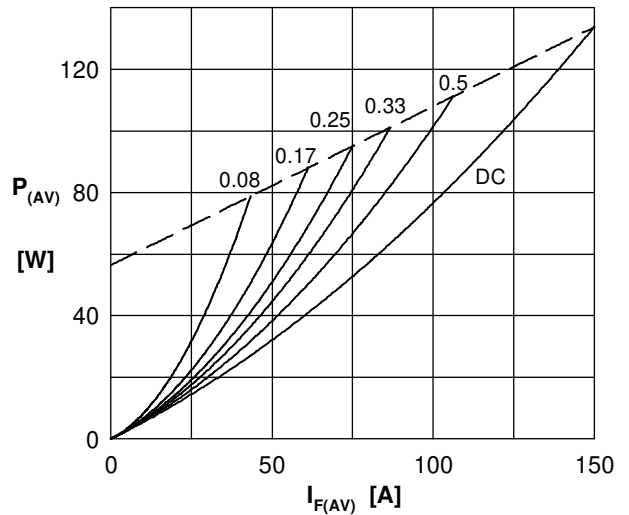


Fig. 4a Power dissipation versus direct output current Fig. 4b and ambient temperature

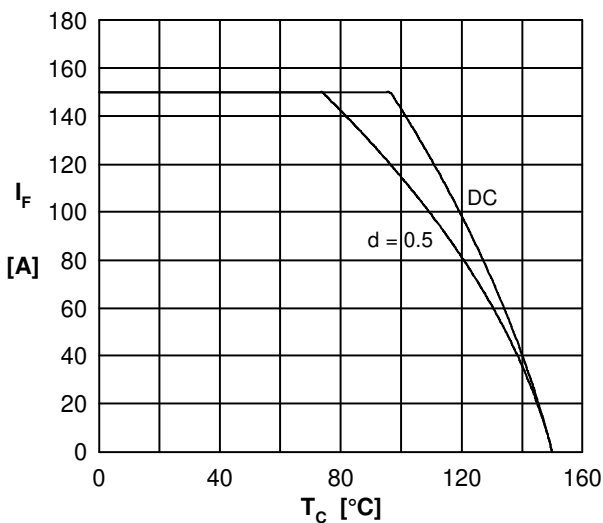


Fig. 5 Average forward current $I_{F(AV)}$ vs. case temp. T_C

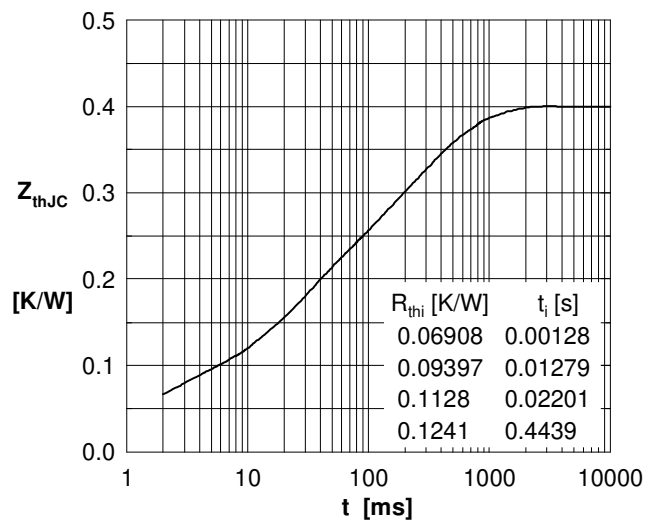


Fig. 6 Transient thermal impedance junction to case

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[IXYS:](#)

[DSA240X150NA](#)