



preliminary

# Schottky Diode Gen <sup>2</sup>

$$V_{RRM} = 15\text{ V}$$

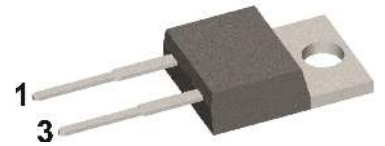
$$I_{FAV} = 20\text{ A}$$

$$V_F = 0.39\text{ V}$$

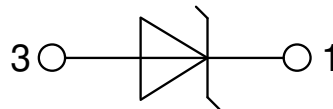
High Performance Schottky Diode  
Low Loss and Soft Recovery  
Single Diode

Part number

**DSB20I15PA**



Backside: cathode



### 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: TO-220

- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0

### 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](http://www.littelfuse.com/disclaimer-electronics).

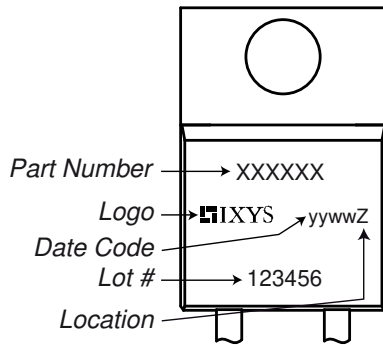


Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
$V_{RSM}$	max. non-repetitive reverse blocking voltage					15	V
$V_{RRM}$	max. repetitive reverse blocking voltage					15	V
$I_R$	reverse current, drain current	$V_R = 15\text{ V}$		$T_{VJ} = 25^\circ\text{C}$		5	mA
		$V_R = 15\text{ V}$		$T_{VJ} = 100^\circ\text{C}$		40	mA
$V_F$	forward voltage drop	$I_F = 20\text{ A}$		$T_{VJ} = 25^\circ\text{C}$		0.48	V
		$I_F = 40\text{ A}$				0.60	V
		$I_F = 20\text{ A}$		$T_{VJ} = 125^\circ\text{C}$		0.39	V
		$I_F = 40\text{ A}$				0.54	V
$I_{FAV}$	average forward current	$T_C = 130^\circ\text{C}$	rectangular	$T_{VJ} = 150^\circ\text{C}$		20	A
$V_{F0}$	threshold voltage	} for power loss calculation only		$T_{VJ} = 150^\circ\text{C}$		0.23	V
$r_F$	slope resistance					7.2	mΩ
$R_{thJC}$	thermal resistance junction to case					1.75	K/W
$R_{thCH}$	thermal resistance case to heatsink				0.5		K/W
$P_{tot}$	total power dissipation			$T_C = 25^\circ\text{C}$		70	W
$I_{FSM}$	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$		$T_{VJ} = 45^\circ\text{C}$		390	A
$C_J$	junction capacitance	$V_R = 3\text{ V}$	$f = 1\text{ MHz}$	$T_{VJ} = 25^\circ\text{C}$	1.28		nF



Package TO-220			Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
$I_{RMS}$	RMS current	per terminal			35	A
$T_{VJ}$	virtual junction temperature		-55		150	°C
$T_{op}$	operation temperature		-55		125	°C
$T_{stg}$	storage temperature		-55		150	°C
<b>Weight</b>				2		g
$M_D$	mounting torque		0.4		0.6	Nm
$F_C$	mounting force with clip		20		60	N

**Product Marking**



**Part description**

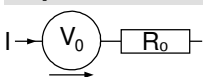
- D = Diode
- S = Schottky Diode
- B = ultra low VF
- 20 = Current Rating [A]
- I = Single Diode
- 15 = Reverse Voltage [V]
- PA = TO-220AC (2)

Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSB20I15PA	DSB20I15PA	Tube	50	505563

**Equivalent Circuits for Simulation**

\* on die level

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

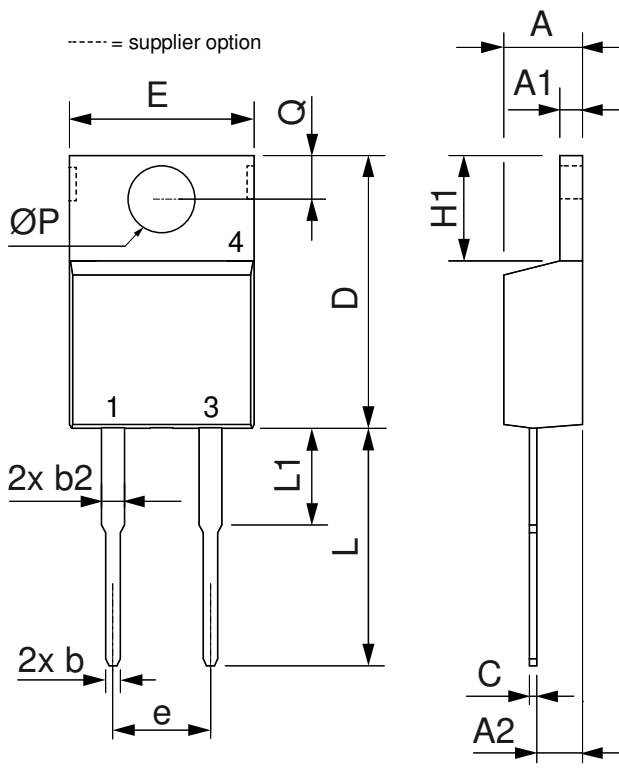


Schottky

$V_{0\ max}$	threshold voltage	0.23	V
$R_{0\ max}$	slope resistance *	4.1	mΩ



**Outlines TO-220**



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.32	4.82	0.170	0.190
A1	1.14	1.39	0.045	0.055
A2	2.29	2.79	0.090	0.110
b	0.64	1.01	0.025	0.040
b2	1.15	1.65	0.045	0.065
C	0.35	0.56	0.014	0.022
D	14.73	16.00	0.580	0.630
E	9.91	10.66	0.390	0.420
e	5.08	BSC	0.200	BSC
H1	5.85	6.85	0.230	0.270
L	12.70	13.97	0.500	0.550
L1	2.79	5.84	0.110	0.230
ØP	3.54	4.08	0.139	0.161
Q	2.54	3.18	0.100	0.125

