



preliminary

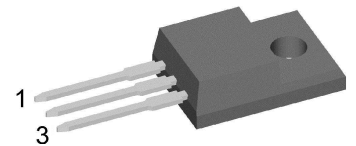
# Schottky Diode Gen <sup>2</sup>

$V_{RRM}$	=	60 V
$I_{FAV}$	= 2x	10 A
$V_F$	=	0.62 V

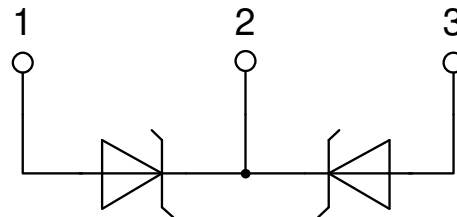
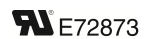
High Performance Schottky Diode  
Low Loss and Soft Recovery  
Common Cathode

Part number

**DSB20C60PN**



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: TO-220FP**

- Isolation Voltage: 2500 V~
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0
- Soldering pins for PCB mounting
- Base plate: Plastic overmolded tab
- Reduced weight

**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).



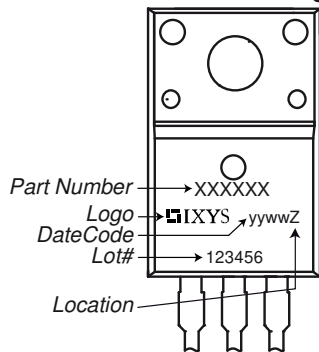
Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
$V_{RSM}$	max. non-repetitive reverse blocking voltage					60	V
$V_{RRM}$	max. repetitive reverse blocking voltage					60	V
$I_R$	reverse current, drain current	$V_R = 60\text{ V}$		$T_{VJ} = 25^\circ\text{C}$		4	mA
		$V_R = 60\text{ V}$		$T_{VJ} = 100^\circ\text{C}$		35	mA
$V_F$	forward voltage drop	$I_F = 10\text{ A}$		$T_{VJ} = 25^\circ\text{C}$		0.69	V
		$I_F = 20\text{ A}$				0.93	V
		$I_F = 10\text{ A}$		$T_{VJ} = 125^\circ\text{C}$		0.62	V
		$I_F = 20\text{ A}$				0.82	V
$I_{FAV}$	average forward current	$T_C = 110^\circ\text{C}$	rectangular	$T_{VJ} = 150^\circ\text{C}$		10	A
$V_{F0}$	threshold voltage	} for power loss calculation only		$T_{VJ} = 150^\circ\text{C}$		0.44	V
$r_F$	slope resistance					16.1	mΩ
$R_{thJC}$	thermal resistance junction to case					4.5	K/W
$R_{thCH}$	thermal resistance case to heatsink				0.5		K/W
$P_{tot}$	total power dissipation			$T_C = 25^\circ\text{C}$		30	W
$I_{FSM}$	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$		$T_{VJ} = 45^\circ\text{C}$		240	A
$C_J$	junction capacitance	$V_R = 12\text{ V}$	$f = 1\text{ MHz}$	$T_{VJ} = 25^\circ\text{C}$		149	pF



preliminary

Package TO-220FP		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
$d_{Spp/App}$	creepage distance on surface   striking distance through air	terminal to terminal	1.6	1.0		mm
$d_{Spb/Apb}$		terminal to backside	2.5	2.5		mm
$V_{ISOL}$	isolation voltage	t = 1 second	2500			V
		t = 1 minute	2100			V

**Product Marking**



**Part description**

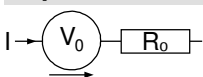
- D = Diode
- S = Schottky Diode
- B = ultra low VF
- 20 = Current Rating [A]
- C = Common Cathode
- 60 = Reverse Voltage [V]
- PN = TO-220ABFP (3)

Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSB20C60PN	DSB20C60PN	Tube	50	508864

**Equivalent Circuits for Simulation**

\* on die level

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

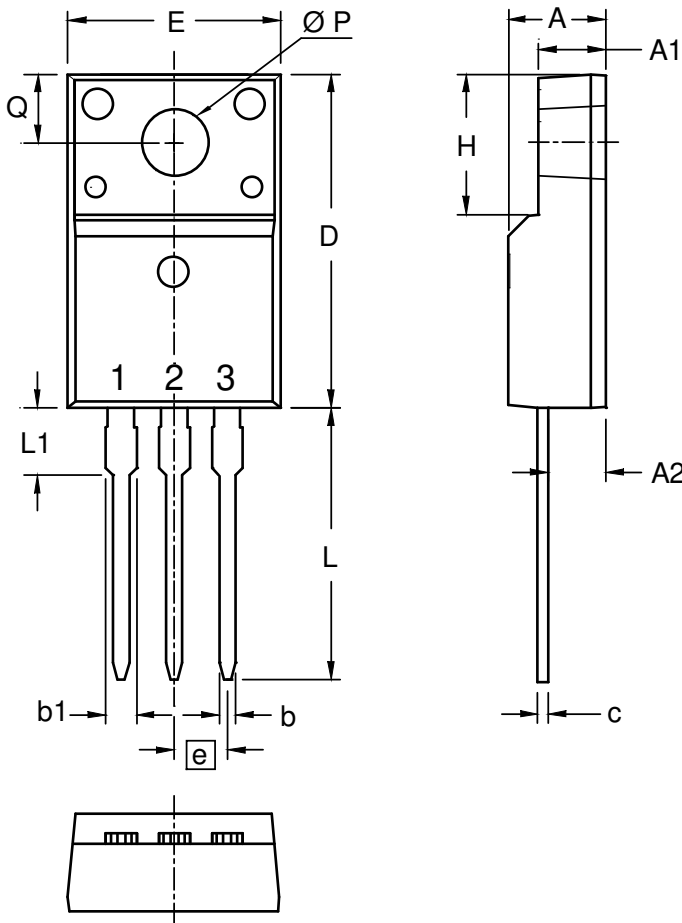


**Schottky**

$V_{0\ max}$	threshold voltage	0.44	V
$R_{0\ max}$	slope resistance *	13	mΩ



**Outlines TO-220FP**



Dim.	Millimeters		Inches	
	min	max	min	max
A	4.50	4.90	0.177	0.193
A1	2.34	2.74	0.092	0.108
A2	2.56	2.96	0.101	0.117
b	0.70	0.90	0.028	0.035
c	0.45	0.60	0.018	0.024
D	15.67	16.07	0.617	0.633
E	9.96	10.36	0.392	0.408
e	2.54 BSC		0.100 BSC	
H	6.48	6.88	0.255	0.271
L	12.68	13.28	0.499	0.523
L1	3.03	3.43	0.119	0.135
ØP	3.08	3.28	0.121	0.129
Q	3.20	3.40	0.126	0.134

