

preliminary

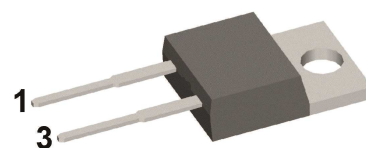
Schottky Diode

$$\begin{aligned} V_{RRM} &= 15 \text{ V} \\ I_{FAV} &= 20 \text{ A} \\ V_F &= 0.33 \text{ V} \end{aligned}$$

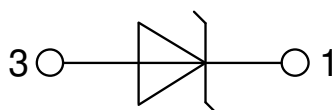
High Performance Schottky Diode
 Low Loss and Soft Recovery
 Single Diode

Part number

DSS20-0015B



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

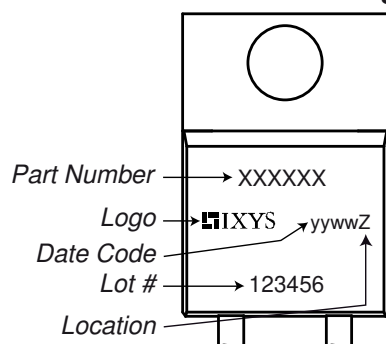
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Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	max. non-repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}\text{C}$				15	V
V_{RRM}	max. repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}\text{C}$				15	V
I_R	reverse current, drain current	$V_R = 15\text{ V}$	$T_{VJ} = 25^{\circ}\text{C}$			10	mA
		$V_R = 15\text{ V}$	$T_{VJ} = 100^{\circ}\text{C}$			200	mA
V_F	forward voltage drop	$I_F = 20\text{ A}$	$T_{VJ} = 25^{\circ}\text{C}$			0.44	V
		$I_F = 40\text{ A}$				0.53	V
		$I_F = 20\text{ A}$	$T_{VJ} = 125^{\circ}\text{C}$			0.33	V
		$I_F = 40\text{ A}$				0.45	V
I_{FAV}	average forward current	$T_C = 135^{\circ}\text{C}$ rectangular	$T_{VJ} = 150^{\circ}\text{C}$ d = 0.5			20	A
V_{F0}	threshold voltage	} for power loss calculation only		$T_{VJ} = 150^{\circ}\text{C}$		0.19	V
r_F	slope resistance					5.9	mΩ
R_{thJC}	thermal resistance junction to case					1.4	K/W
R_{thCH}	thermal resistance case to heatsink				0.5		K/W
P_{tot}	total power dissipation	$T_C = 25^{\circ}\text{C}$				90	W
I_{FSM}	max. forward surge current	t = 10 ms; (50 Hz), sine; $V_R = 0\text{ V}$		$T_{VJ} = 45^{\circ}\text{C}$		300	A
C_J	junction capacitance	$V_R = 3\text{ V}$ f = 1 MHz		$T_{VJ} = 25^{\circ}\text{C}$	2.53		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
Weight				2		g
M_D	mounting torque		0.4		0.6	Nm
F_C	mounting force with clip		20		60	N

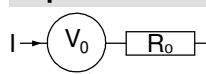
Product Marking



Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSS20-0015B	DSS20-0015B	Tube	50	477281

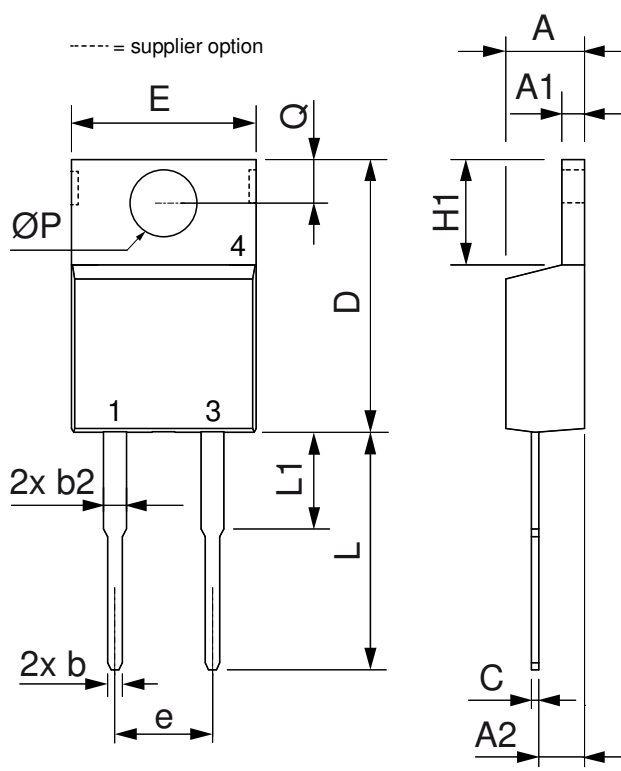
Equivalent Circuits for Simulation

* on die level

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


Schottky

$V_{0\max}$	threshold voltage	0.19	V
$R_{0\max}$	slope resistance *	2.7	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
$\varnothing P$	3.54	4.08	0.139	0.161
Q	2.54	3.18	0.100	0.125

