

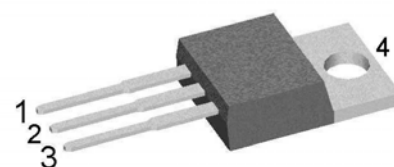
preliminary

Schottky Diode Gen ²

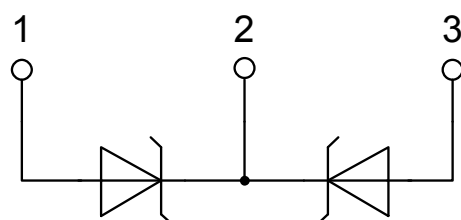
V_{RRM}	=	45V
I_{FAV}	= 2x	30A
V_F	=	0.6V

High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode

Part number

DSB60C45PB


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

Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V _{RSM}	max. non-repetitive reverse blocking voltage	T _{VJ} = 25°C				45	V
V _{RRM}	max. repetitive reverse blocking voltage	T _{VJ} = 25°C				45	V
I _R	reverse current, drain current	V _R = 45 V	T _{VJ} = 25°C			10	mA
		V _R = 45 V	T _{VJ} = 100°C			100	mA
V _F	forward voltage drop	I _F = 30 A	T _{VJ} = 25°C			0.63	V
		I _F = 60 A				0.91	V
		I _F = 30 A	T _{VJ} = 125°C			0.60	V
		I _F = 60 A				0.89	V
I _{FAV}	average forward current	T _C = 125°C rectangular d = 0.5	T _{VJ} = 150°C			30	A
V _{F0}	threshold voltage	} for power loss calculation only				0.31	V
r _F	slope resistance					9.3	mΩ
R _{thJC}	thermal resistance junction to case					0.85	K/W
R _{thCH}	thermal resistance case to heatsink				0.50		K/W
P _{tot}	total power dissipation	T _C = 25°C				145	W
I _{FSM}	max. forward surge current	t = 10 ms; (50 Hz), sine; V _R = 0 V		T _{VJ} = 45°C		490	A
C _J	junction capacitance	V _R = 5 V f = 1 MHz		T _{VJ} = 25°C		980	pF

preliminary

Package TO-220			Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal ¹⁾			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



Part number

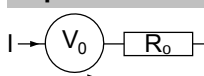
D = Diode
 S = Schottky Diode
 B = ultra low VF
 60 = Current Rating [A]
 C = Common Cathode
 45 = Reverse Voltage [V]
 PB = TO-220AB (3)

Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSB60C45PB	DSB60C45PB	Tube	50	505570

Similar Part	Package	Voltage class
DSB60C45HB	TO-247AD (3)	45

Equivalent Circuits for Simulation

* on die level

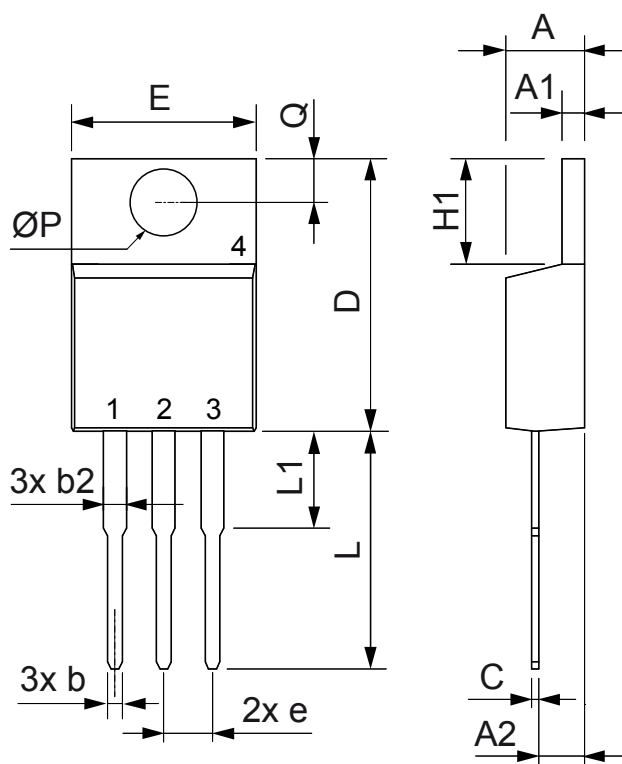
 $T_{VJ} = 150\text{ °C}$ 

Schottky

$V_{0\max}$ threshold voltage 0.31 V

$R_{0\max}$ slope resistance * 6.2 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	2.54	BSC	0.100	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

