

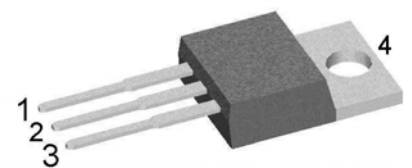
preliminary

Schottky Diode Gen ²

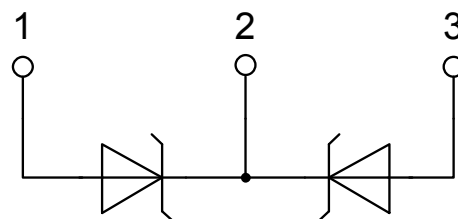
$$\begin{aligned} V_{RRM} &= 60V \\ I_{FAV} &= 2 \times 15A \\ V_F &= 0.72V \end{aligned}$$

High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode

Part number

DSA30C60PB


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				60	V
V _{RRM}	max. repetitive reverse blocking voltage	T _{VJ} = 25°C				60	V
I _R	reverse current, drain current	V _R = 60 V	T _{VJ} = 25°C			250	μA
		V _R = 60 V	T _{VJ} = 125°C			3	mA
V _F	forward voltage drop	I _F = 15 A	T _{VJ} = 25°C			0.88	V
		I _F = 30 A				1.09	V
		I _F = 15 A	T _{VJ} = 125°C			0.72	V
		I _F = 30 A				0.90	V
I _{FAV}	average forward current	T _C = 155°C rectangular d = 0.5	T _{VJ} = 175°C			15	A
V _{F0}	threshold voltage	} for power loss calculation only		T _{VJ} = 175°C		0.49	V
r _F	slope resistance					10.4	mΩ
R _{thJC}	thermal resistance junction to case					1.75	K/W
R _{thCH}	thermal resistance case to heatsink				0.50		K/W
P _{tot}	total power dissipation	T _C = 25°C				85	W
I _{FSM}	max. forward surge current	t = 10 ms; (50 Hz), sine; V _R = 0 V		T _{VJ} = 45°C		340	A
C _J	junction capacitance	V _R = 12 V f = 1 MHz		T _{VJ} = 25°C		227	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		175	°C
T_{op}	operation temperature		-55		150	°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



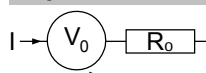
Part number

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

Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSA30C60PB	DSA30C60PB	Tube	50	506715

Equivalent Circuits for Simulation

* on die level

 $T_{VJ} = 175^{\circ}\text{C}$ 

Schottky

 $V_{0\max}$ threshold voltage 0.49

V

 $R_{0\max}$ slope resistance * 7.2

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
ØP	3.54	4.08	0.139	0.161
Q	2.54	3.18	0.100	0.125

