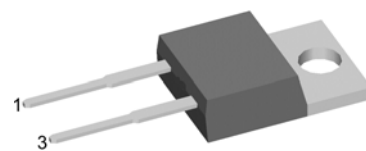
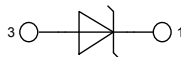


Schottky Diode Gen²

High Performance Schottky Diode
Low Loss and Soft Recovery
Single Diode

Part number

DSA 15 I 45 PA



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:

- Housing: TO-220
- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

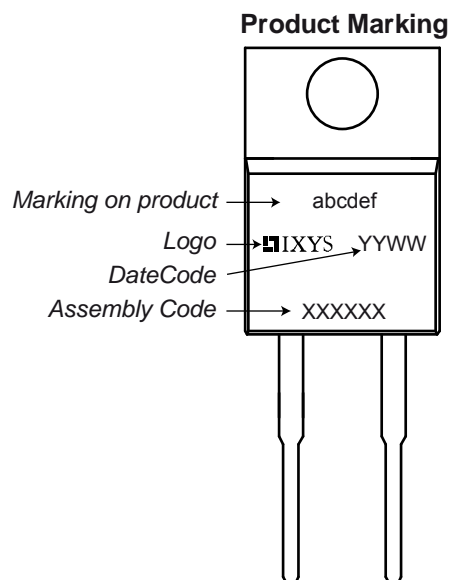
Ratings

Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RRM}	max. repetitive reverse voltage		$T_{VJ} = 25^{\circ}\text{C}$			45	V
I_R	reverse current	$V_R = 45\text{ V}$	$T_{VJ} = 25^{\circ}\text{C}$			0.5	mA
		$V_R = 45\text{ V}$	$T_{VJ} = 125^{\circ}\text{C}$			2.5	mA
V_F	forward voltage	$I_F = 15\text{ A}$	$T_{VJ} = 25^{\circ}\text{C}$			0.75	V
		$I_F = 30\text{ A}$				0.91	V
		$I_F = 15\text{ A}$	$T_{VJ} = 125^{\circ}\text{C}$			0.63	V
		$I_F = 30\text{ A}$				0.79	V
I_{FAV}	average forward current	rectangular $d = 0.5$	$T_C = 155^{\circ}\text{C}$			15	A
V_{F0}	threshold voltage	} for power loss calculation only		$T_{VJ} = 175^{\circ}\text{C}$		0.42	V
r_F	slope resistance					9.9	mΩ
R_{thJC}	thermal resistance junction to case					1.75	K/W
T_{VJ}	virtual junction temperature			-55		175	$^{\circ}\text{C}$
P_{tot}	total power dissipation		$T_C = 25^{\circ}\text{C}$			85	W
I_{FSM}	max. forward surge current	$t = 10\text{ ms (50 Hz), sine}$	$T_{VJ} = 45^{\circ}\text{C}$			140	A
C_J	junction capacitance	$V_R = 5\text{ V}; f = 1\text{ MHz}$	$T_{VJ} = 25^{\circ}\text{C}$		497		pF
E_{AS}	non-repetitive avalanche energy	$I_{AS} = 13\text{ A}; L = 180\text{ μH}$	$T_{VJ} = 25^{\circ}\text{C}$			15	mJ
I_{AR}	repetitive avalanche current	$V_A = 1.5 \cdot V_R$ typ.: $f = 10\text{ kHz}$				1.3	A

Symbol	Definition	Conditions	Ratings			
			min.	typ.	max.	Unit
I_{RMS}	RMS current	per pin ¹⁾			35	A
R_{thCH}	thermal resistance case to heatsink			0.50		K/W
T_{stg}	storage temperature		-55		150	°C
Weight				2		g
M_D	mounting torque		0.4		0.8	Nm
F_C	mounting force with clip		20		60	N

¹⁾ I_{RMS} is typically limited by: 1. pin-to-chip resistance; or by 2. current capability of the chip.

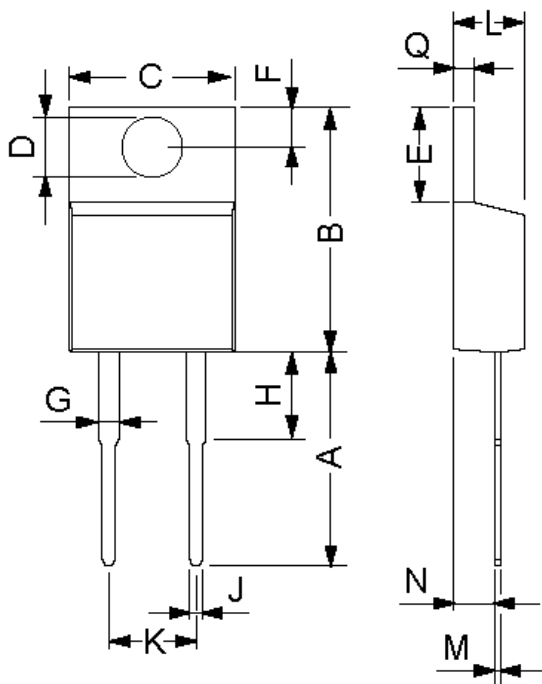
In case of 1, a common cathode/anode configuration and a non-isolated backside, the whole current capability can be used by connecting the backside.



Part number

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

Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Code Key
Standard	DSA 15 I 45 PA	DSA15I45PA	Tube	50	505122

Outlines TO-220


Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	12.7	14.73	0.5	0.58
B	14.23	16.51	0.56	0.65
C	9.66	10.66	0.38	0.42
D	3.54	4.08	0.139	0.161
E	5.85	6.85	2.3	0.42
F	2.54	3.42	0.1	0.135
G	1.15	1.77	0.045	0.07
H	-	6.35	-	0.25
J	0.64	0.89	0.025	0.035
K	4.83	5.33	0.19	0.21
L	3.56	4.82	0.14	0.19
M	0.51	0.76	0.02	0.03
N	2.04	2.49	0.08	0.115
Q	0.64	1.39	0.025	0.055