preliminary

Schottky Diode Gen ²

V_{RRM} = 45V
I_{FAV} = 15A
V_F = 0.63V

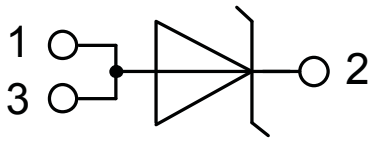
High Performance Schottky Diode
Low Loss and Soft Recovery
Single Diode

Part number

DSA15IM45IB



Backside: cathode



Features / Advantages:

- Very low Vf
- Extremely low switching losses
- Low Irm 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-262 (I2Pak)

- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0

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preliminary

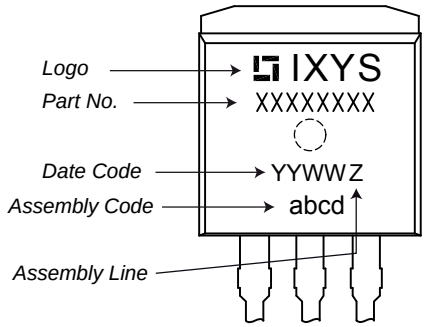
Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	*max. non-repetitive reverse blocking voltage*		T_{VJ} = 25°C			45	V
V_{RRM}	*max. repetitive reverse blocking voltage*		T_{VJ} = 25°C			45	V
I_R	*reverse current, drain current*	V_R = 45 V	T_{VJ} = 25°C			250	µA
		V_R = 45 V	T_{VJ} = 125°C			2.5	mA
V_F	*forward voltage drop*	I_F = 15 A	T_{VJ} = 25°C			0.75	V
		I_F = 30 A				0.91	V
		I_F = 15 A	T_{VJ} = 125°C			0.63	V
		I_F = 30 A				0.79	V
I_{FAV}	*average forward current*	T_C = 155°C	T_{VJ} = 175°C			15	A
		rectangular d = 0.5					
V_{F0}	*threshold voltage* } *for power loss calculation only*		T_{VJ} = 175°C			0.42	V
r_F	*slope resistance* }					9.9	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 = 5 V f = 1 MHz	T_{VJ} = 25°C		497		pF

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Package TO-262 (I2Pak)			Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I_{RMS}	*RMS current*	per terminal			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				1.5		g
F_C	*mounting force with clip*		20		60	N

Product Marking



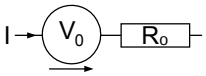
Part number

D = Diode
S = Schottky Diode
A = low VF
15 = Current Rating [A]
IM = Single Diode
45 = Reverse Voltage [V]
IB = TO-262 (I2Pak) (3)

Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSA15IM45IB	DSA15IM45IB	Tube	50	502475

Equivalent Circuits for Simulation

** on die level* T_{VJ} = 175 °C

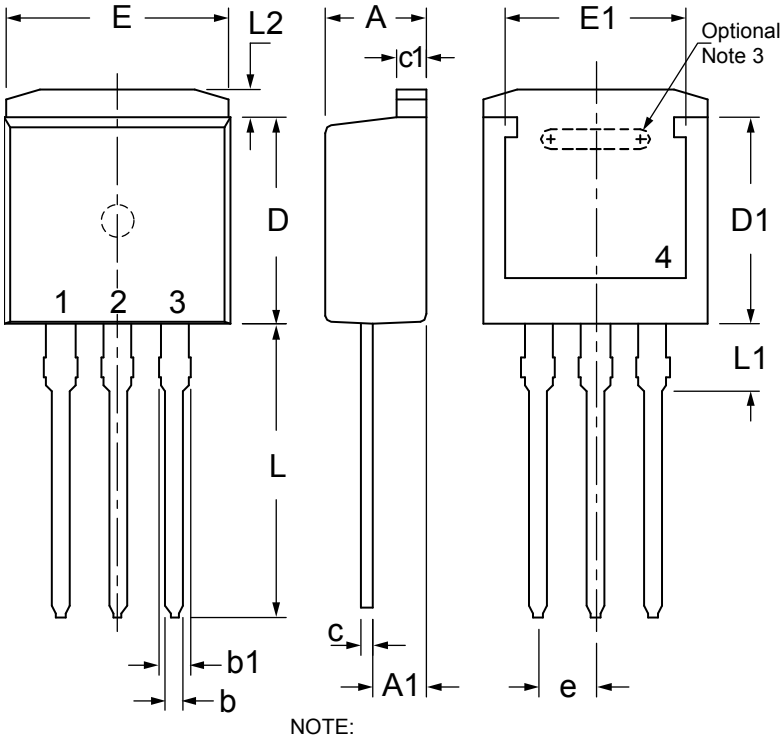


Schottky

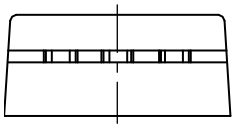
$V_{0\,max}$	*threshold voltage*	0.42	V
$R_{0\,max}$	*slope resistance **	6.7	mΩ

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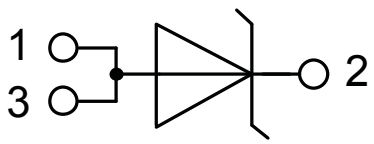
Outlines TO-262 (I2Pak)



SYM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	.160	.190	4.06	4.83
A1	.080	.110	2.03	2.79
b	.025	.035	0.64	0.88
b1	.025	.039	1.14	1.40
c	.018	.025	0.46	0.64
c1	.045	.055	1.14	1.40
D	.340	.380	8.64	9.65
D1	.270	.290	6.86	7.37
E	.380	.405	9.65	10.29
E1	.245	.320	6.22	8.13
e	.100 BSC		2.54 BSC	
L	.500	.560	12.70	14.22
L1	.100	.125	2.54	3.18
L2	.040	.055	1.02	1.40



NOTE:
1. This drawing will meet all dimensions requirement of JEDEC outline TO-262 AA.
2. All metal surface are matte pure tin plated except trimmed area.
3. Inter locking slot depends upon frame type.



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