

Schottky Diode Gen ²

preliminary

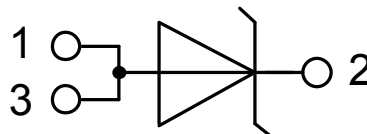
$$\begin{aligned} V_{RRM} &= 45V \\ I_{FAV} &= 15A \\ V_F &= 0.55V \end{aligned}$$

High Performance Schottky Diode
Low Loss and Soft Recovery
Single Diode

Part number

DSB15IM45IB


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-262 (I2Pak)

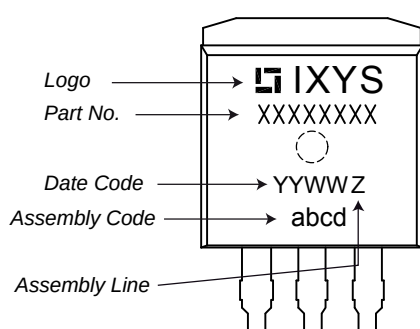
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0

Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	max. non-repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}\text{C}$				45	V
V_{RRM}	max. repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}\text{C}$				45	V
I_R	reverse current, drain current	$V_R = 45\text{ V}$	$T_{VJ} = 25^{\circ}\text{C}$			5	mA
		$V_R = 45\text{ V}$	$T_{VJ} = 100^{\circ}\text{C}$			50	mA
V_F	forward voltage drop	$I_F = 15\text{ A}$	$T_{VJ} = 25^{\circ}\text{C}$			0.59	V
		$I_F = 30\text{ A}$				0.83	V
		$I_F = 15\text{ A}$	$T_{VJ} = 125^{\circ}\text{C}$			0.55	V
		$I_F = 30\text{ A}$				0.80	V
I_{FAV}	average forward current	$T_C = 130^{\circ}\text{C}$ rectangular $d = 0.5$	$T_{VJ} = 150^{\circ}\text{C}$			15	A
V_{F0}	threshold voltage	} for power loss calculation only		$T_{VJ} = 150^{\circ}\text{C}$		0.31	V
r_F	slope resistance					15.5	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	$T_C = 25^{\circ}\text{C}$				70	W
I_{FSM}	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$	$T_{VJ} = 45^{\circ}\text{C}$			340	A
C_J	junction capacitance	$V_R = 5\text{ V}$ $f = 1\text{ MHz}$	$T_{VJ} = 25^{\circ}\text{C}$		497		pF

preliminary

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		150	°C
T_{op}	operation temperature		-55		125	°C
T_{stg}	storage temperature		-55		150	°C
Weight				1.5		g
F_c	mounting force with clip		20		60	N

Product Marking



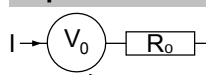
Part number

D = Diode
 S = Schottky Diode
 B = ultra 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	DSB15IM45IB	DSB15IM45IB	Tube	50	502322

Equivalent Circuits for Simulation

* on die level

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

Schottky

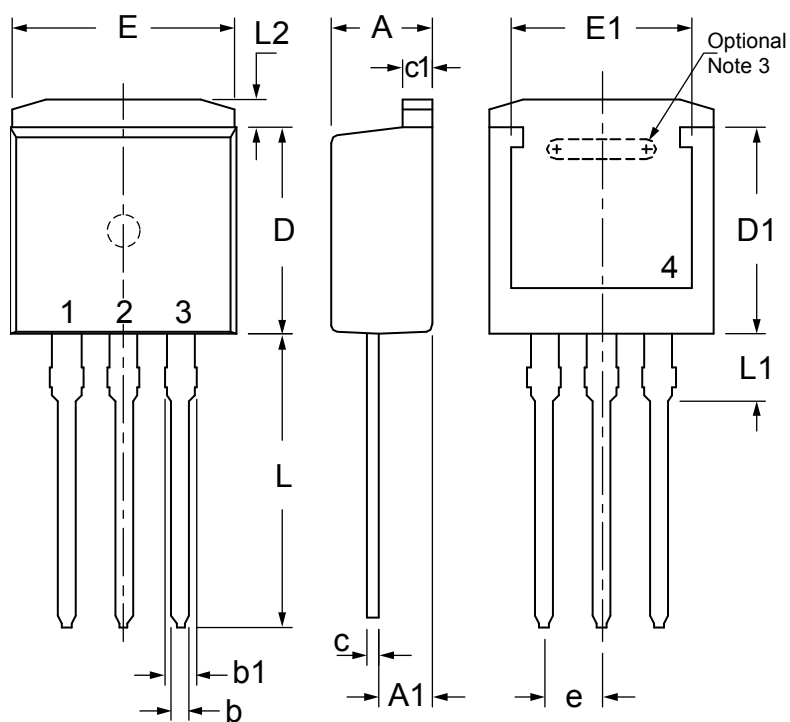
 $V_{0\max}$ threshold voltage 0.31

V

 $R_{0\max}$ slope resistance * 12.4

mΩ

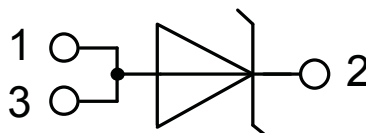
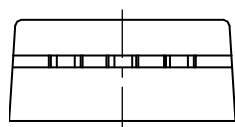
Outlines TO-262 (I2Pak)



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.



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[IXYS:](#)

[DSB15IM45IB](#)