



preliminary

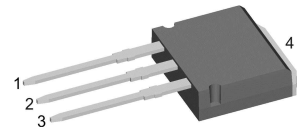
# Schottky Diode

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

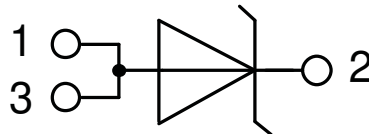
High Performance Schottky Diode  
 Low Loss and Soft Recovery  
 Single Diode

Part number

**DSA15IM45IB**



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

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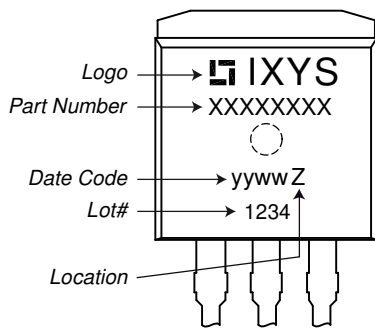


Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
$V_{RSM}$	max. non-repetitive reverse blocking voltage					45	V
$V_{RRM}$	max. repetitive reverse blocking voltage					45	V
$I_R$	reverse current, drain current	$V_R = 45\text{ V}$		$T_{VJ} = 25^\circ\text{C}$		250	$\mu\text{A}$
		$V_R = 45\text{ V}$		$T_{VJ} = 125^\circ\text{C}$		2.5	mA
$V_F$	forward voltage drop	$I_F = 15\text{ A}$		$T_{VJ} = 25^\circ\text{C}$		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	$T_C = 155^\circ\text{C}$	rectangular	$T_{VJ} = 175^\circ\text{C}$		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	m $\Omega$
$R_{thJC}$	thermal resistance junction to case					1.75	K/W
$R_{thCH}$	thermal resistance case to heatsink				0.5		K/W
$P_{tot}$	total power dissipation			$T_C = 25^\circ\text{C}$		85	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



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
<b>Weight</b>				1.5		g
$F_C$	mounting force with clip		20		60	N

**Product Marking**



**Part description**

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

**Equivalent Circuits for Simulation**

\* on die level

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

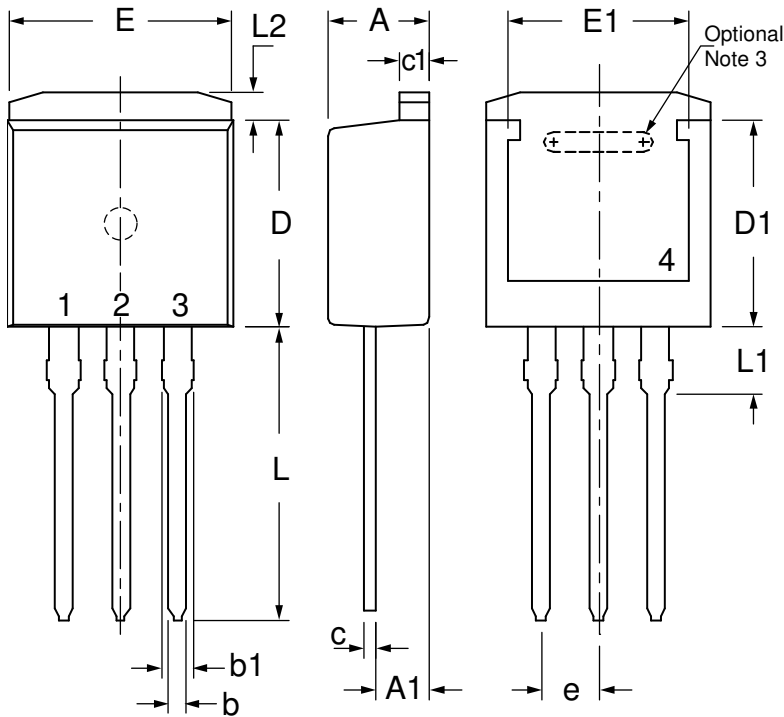


Schottky

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



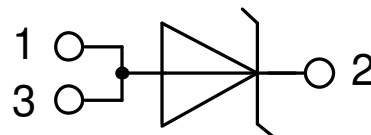
**Outlines TO-262 (I2Pak)**



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.



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