

# Schottky Diode Gen <sup>2</sup>

preliminary

$$V_{RRM} = 200V$$

$$I_{FAV} = 2 \times 15A$$

$$V_F = 0.78V$$

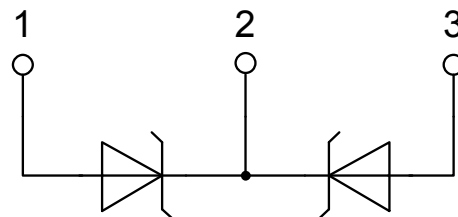
High Performance Schottky Diode  
Low Loss and Soft Recovery  
Common Cathode

Part number

**DSA30C200IB**



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)

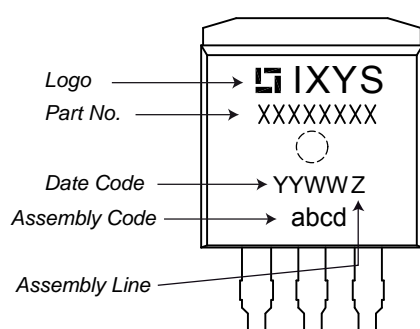
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0

Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
$V_{RSM}$	max. non-repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}\text{C}$				200	V
$V_{RRM}$	max. repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}\text{C}$				200	V
$I_R$	reverse current, drain current	$V_R = 200\text{ V}$	$T_{VJ} = 25^{\circ}\text{C}$			250	$\mu\text{A}$
		$V_R = 200\text{ V}$	$T_{VJ} = 125^{\circ}\text{C}$			2.5	mA
$V_F$	forward voltage drop	$I_F = 15\text{ A}$	$T_{VJ} = 25^{\circ}\text{C}$			0.94	V
		$I_F = 30\text{ A}$				1.10	V
		$I_F = 15\text{ A}$	$T_{VJ} = 125^{\circ}\text{C}$			0.78	V
		$I_F = 30\text{ A}$				0.95	V
$I_{FAV}$	average forward current	$T_C = 155^{\circ}\text{C}$ rectangular $d = 0.5$	$T_{VJ} = 175^{\circ}\text{C}$			15	A
$V_{F0}$	threshold voltage	} for power loss calculation only				0.53	V
$r_F$	slope resistance					10.8	m $\Omega$
$R_{thJC}$	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	$T_C = 25^{\circ}\text{C}$				85	W
$I_{FSM}$	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$	$T_{VJ} = 45^{\circ}\text{C}$			320	A
$C_J$	junction capacitance	$V_R = 48\text{ V}$ $f = 1\text{ MHz}$	$T_{VJ} = 25^{\circ}\text{C}$		47		pF

preliminary

Package TO-262 (I2Pak)			Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
$I_{RMS}$	RMS current	per terminal <sup>1)</sup>			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

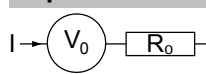
D = Diode  
 S = Schottky Diode  
 A = low VF  
 30 = Current Rating [A]  
 C = Common Cathode  
 200 = Reverse Voltage [V]  
 IB = TO-262 (I2Pak) (3)

Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSA30C200IB	DSA30C200IB	Tube	50	512200

Similar Part	Package	Voltage class
DSA30C200PB	TO-220AB (3)	200

## Equivalent Circuits for Simulation

\* on die level

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

Schottky

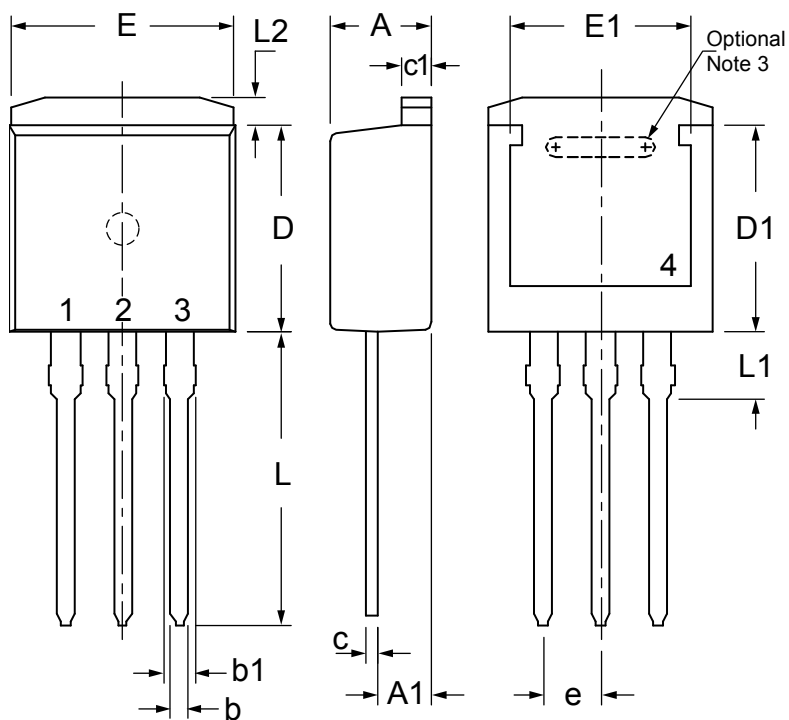
 $V_{0\max}$  threshold voltage 0.53

V

 $R_{0\max}$  slope resistance \* 7.6

mΩ

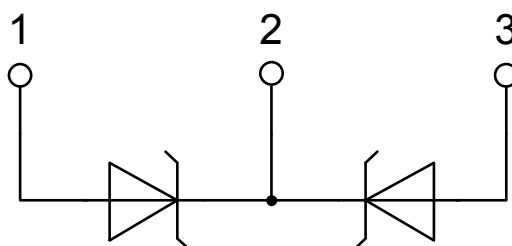
## Outlines TO-262 (I2Pak)



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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