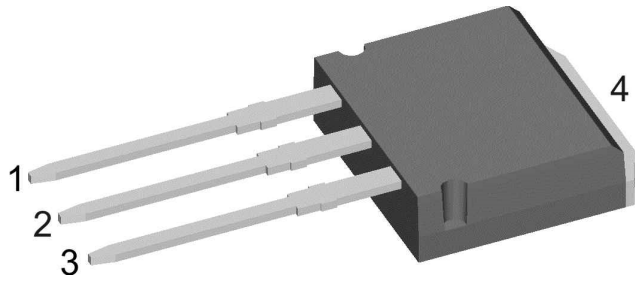
Schottky Diode

V_{RRM} = 200 V
I_{FAV} = 2x 15 A
V_F = 0.78 V

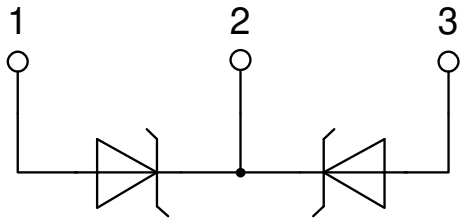
High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode

Part number

DSA30C200IB



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

Disclaimer Notice

Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at www.littelfuse.com/disclaimer-electronics.

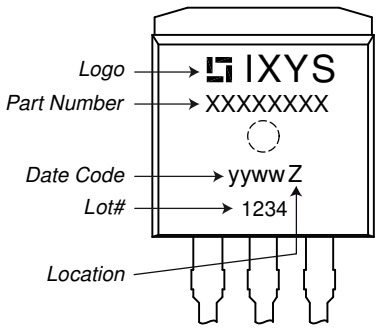
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Schottky				Ratings			
Symbol	**Definition**	**Conditions**		**min.**	**typ.**	**max.**	**Unit**
V_{RSM}	*max. non-repetitive reverse blocking voltage*		T_{VJ} = 25°C			200	V
V_{RRM}	*max. repetitive reverse blocking voltage*		T_{VJ} = 25°C			200	V
I_R	*reverse current, drain current*	V_R = 200 V	T_{VJ} = 25°C			250	µA
		V_R = 200 V	T_{VJ} = 125°C			2.5	mA
V_F	*forward voltage drop*	I_F = 15 A	T_{VJ} = 25°C			0.94	V
		I_F = 30 A				1.10	V
		I_F = 15 A	T_{VJ} = 125°C			0.78	V
		I_F = 30 A				0.95	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			0.53	V
r_F	*slope resistance* }					10.8	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			320	A
C_J	*junction capacitance*	V_R = 48 V f = 1 MHz	T_{VJ} = 25°C		47		pF

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Package TO-262 (I2Pak)			Ratings			
Symbol	**Definition**	**Conditions**	**min.**	**typ.**	**max.**	**Unit**
I_{RMS}	*RMS current*	per terminal 1)			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 description

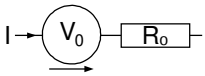
D = Diode
S = Schottky Diode
A = low VF
30 = Current Rating [A]
C = Common Cathode
200 = Reverse Voltage [V]
IB = TO-262 (I2Pak) (3)

Ordering	Ordering 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
DSA30C200PC	TO-263AB (D2Pak) (2)	200

Equivalent Circuits for Simulation

** on die level* $T_{VJ} = 175\,°C$

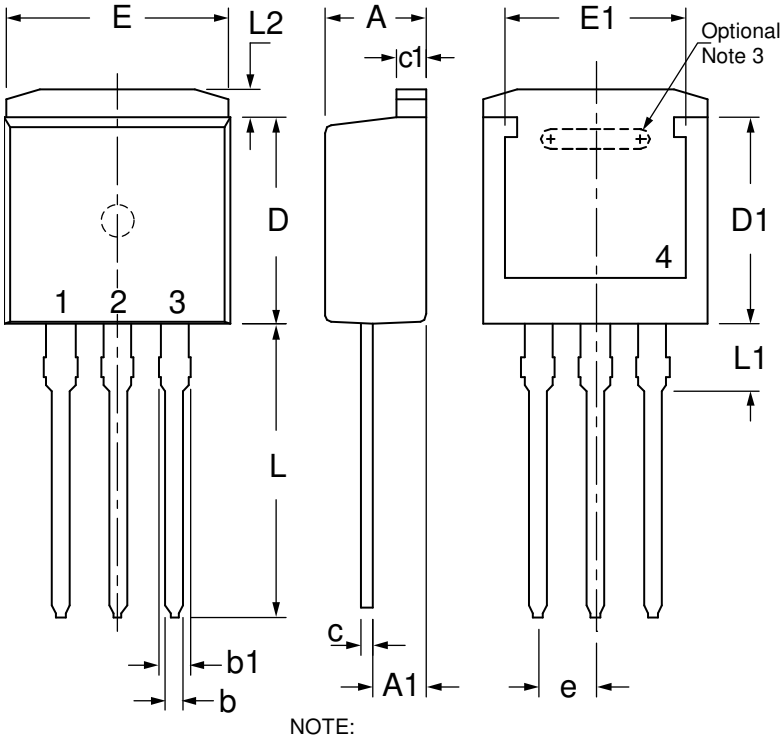


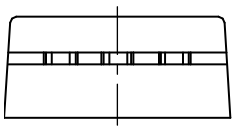
Schottky

$V_{0\,max}$	*threshold voltage*	0.53	V
$R_{0\,max}$	*slope resistance **	7.6	mΩ

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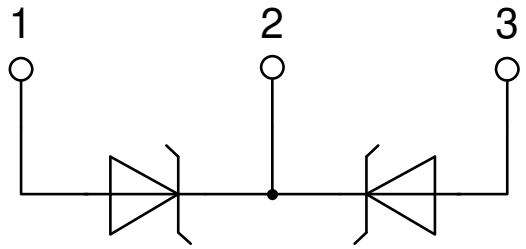
Outlines TO-262 (I2Pak)





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.

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



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Schottky

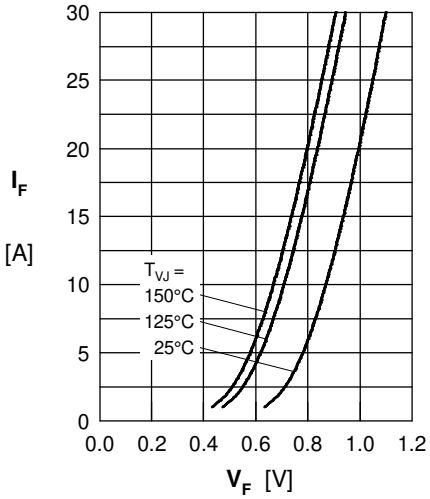


Fig. 1 Maximum forward voltage drop characteristics

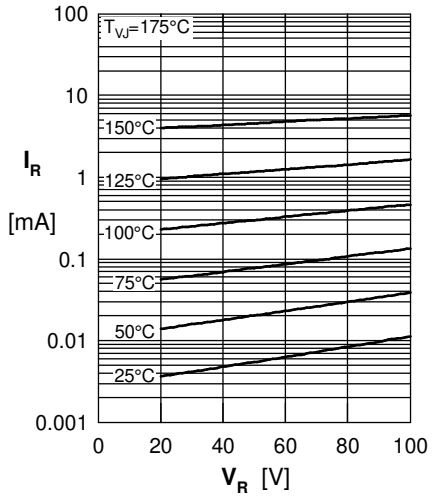


Fig. 2 Typ. reverse current I_R vs. reverse voltage V_R

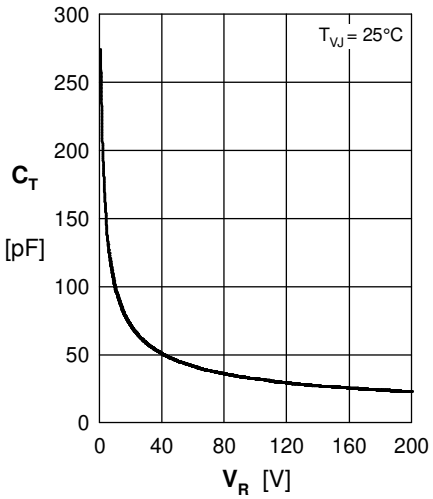


Fig. 3 Typ. junction capacitance C_T vs. reverse voltage V_R

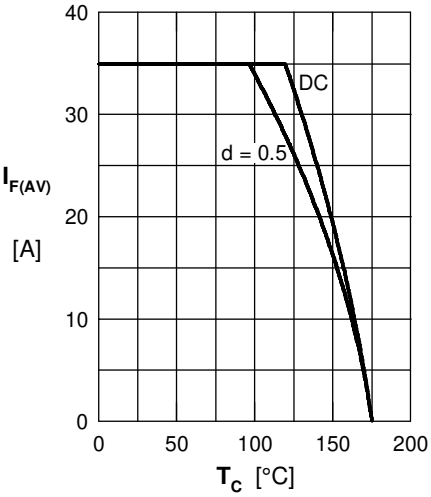


Fig. 4 Average forward current $I_{F(AV)}$ vs. case temperature T_C

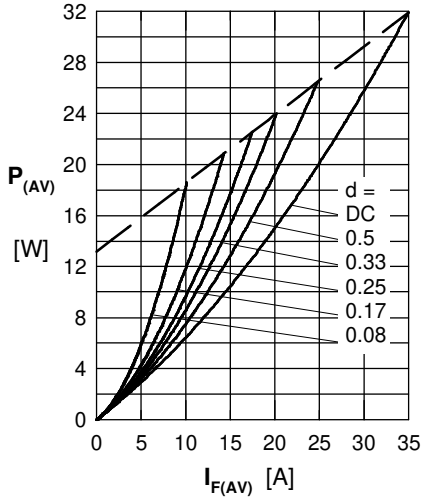


Fig. 5 Forward power loss characteristics

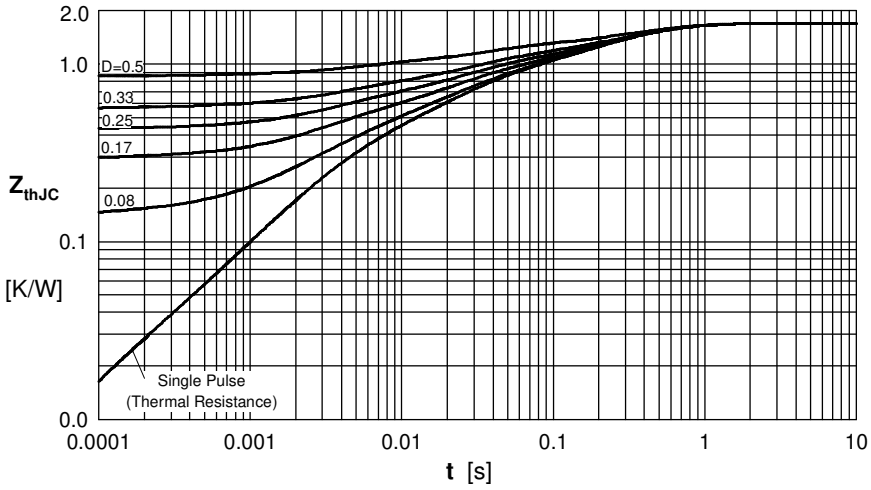


Fig. 6 Transient thermal impedance junction to case

Note: All curves are per diode

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