

advanced

Schottky Diode Gen <sup>2</sup>

$$V_{RRM} = 45 \text{ V}$$

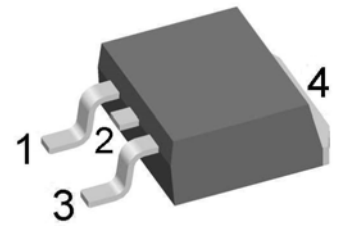
$$I_{FAV} = 2 \times 15 \text{ A}$$

$$V_F = 0.63 \text{ V}$$

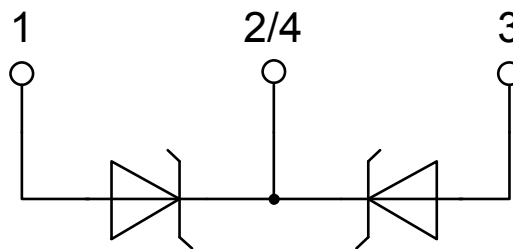
High Performance Schottky Diode  
Low Loss and Soft Recovery  
Common Cathode

Part number

DSA30C45PC



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

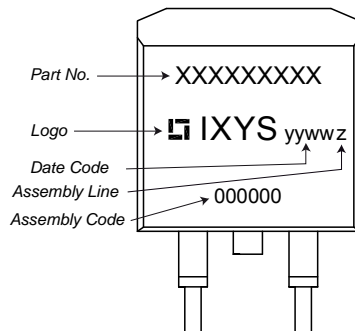
**Package:**

- Housing: TO-263 (D2Pak)
- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

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
$V_{FO}$	threshold voltage			$T_{VJ} = 175^\circ\text{C}$		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				0.25		K/W
$P_{tot}$	total power dissipation			$T_C = 25^\circ\text{C}$		85	W
$I_{FSM}$	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$		$T_{VJ} = 45^\circ\text{C}$		140	A
$C_J$	junction capacitance	$V_R = 5\text{ V}$	$f = 1\text{ MHz}$	$T_{VJ} = 25^\circ\text{C}$		497	pF

advanced

Package TO-263 (D2Pak)			Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
$I_{RMS}$	RMS current	per terminal			35	A
$T_{stg}$	storage temperature		-55		150	°C
$T_{vj}$	virtual junction temperature		-55		175	°C
<b>Weight</b>				2		g
$F_C$	mounting force with clip		20		60	N

**Product Marking**

**Part number**

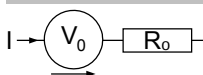
D = Diode  
 S = Schottky Diode  
 A = low VF  
 30 = Current Rating [A]  
 C = Common Cathode  
 45 = Reverse Voltage [V]  
 PC = TO-263AB (D2Pak) (2)

Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSA30C45PC	DSA30C45PC	Tape & Reel	800	512243

Similar Part	Package	Voltage class
DSA30C45PB	TO-220AB (3)	45
DSA30C45HB	TO-247AD (3)	45

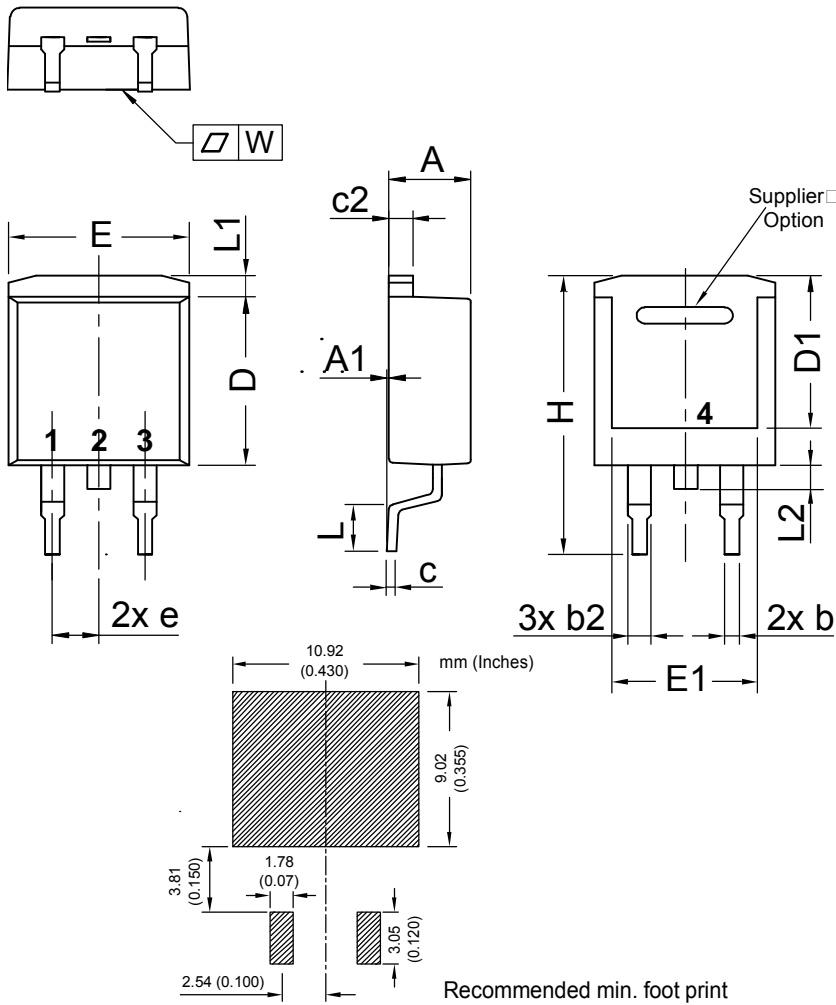
**Equivalent Circuits for Simulation**

\* on die level

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

**Schottky**

$V_{0\max}$	threshold voltage	0.42	V
$R_{0\max}$	slope resistance *	6.8	mΩ

## Outlines TO-263 (D2Pak)



Dim.	Millimeter		Inches	
	min	max	min	max
A	4.06	4.83	0.160	0.190
A1	typ. 0.10		typ. 0.004	
A2	2.41		0.095	
b	0.51	0.99	0.020	0.039
b2	1.14	1.40	0.045	0.055
c	0.40	0.74	0.016	0.029
c2	1.14	1.40	0.045	0.055
D	8.38	9.40	0.330	0.370
D1	8.00	8.89	0.315	0.350
D2	2.5		0.098	
E	9.65	10.41	0.380	0.410
E1	6.22	8.50	0.245	0.335
e	2,54 BSC		0,100 BSC	
e1	4.28		0.169	
H	14.61	15.88	0.575	0.625
L	1.78	2.79	0.070	0.110
L1	1.02	1.68	0.040	0.066
W	typ. 0.02	0.040	typ. 0.0008	0.002

All dimensions conform with and/or within JEDEC standard.

