

Schottky Diode Gen<sup>2</sup>

preliminary

$$V_{RRM} = 60V$$

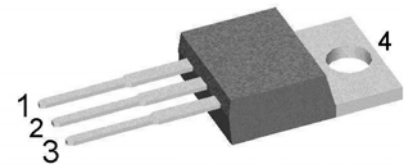
$$I_{FAV} = 2 \times 15A$$

$$V_F = 0.72V$$

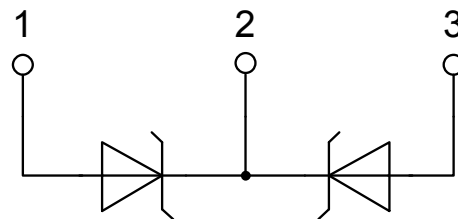
High Performance Schottky Diode  
Low Loss and Soft Recovery  
Common Cathode

Part number

DSA30C60PB



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

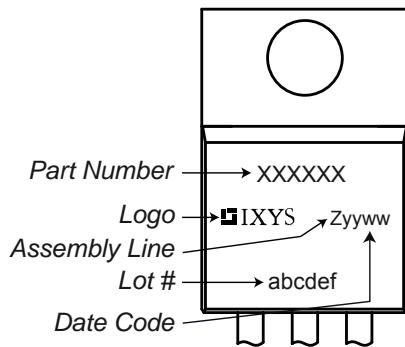
**Package:** TO-220

- 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					60	V
$V_{RRM}$	max. repetitive reverse blocking voltage					60	V
$I_R$	reverse current, drain current	$V_R = 60\text{ V}$		$T_{VJ} = 25^\circ\text{C}$		250	$\mu\text{A}$
		$V_R = 60\text{ V}$		$T_{VJ} = 125^\circ\text{C}$		3	mA
$V_F$	forward voltage drop	$I_F = 15\text{ A}$		$T_{VJ} = 25^\circ\text{C}$		0.88	V
		$I_F = 30\text{ A}$				1.09	V
		$I_F = 15\text{ A}$		$T_{VJ} = 125^\circ\text{C}$		0.72	V
		$I_F = 30\text{ A}$				0.90	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			$T_{VJ} = 175^\circ\text{C}$		0.49	V
$r_F$	slope resistance	} for power loss calculation only				10.4	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	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$		$T_{VJ} = 45^\circ\text{C}$		340	A
$C_J$	junction capacitance	$V_R = 12\text{ V}$	$f = 1\text{ MHz}$	$T_{VJ} = 25^\circ\text{C}$		227	pF

preliminary

Package TO-220			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
<b>Weight</b>				2		g
$M_D$	mounting torque		0.4		0.6	Nm
$F_C$	mounting force with clip		20		60	N

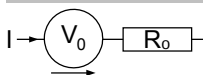
**Product Marking**

**Part number**

- D = Diode
- S = Schottky Diode
- A = low VF
- 30 = Current Rating [A]
- C = Common Cathode
- 60 = Reverse Voltage [V]
- PB = TO-220AB (3)

Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSA30C60PB	DSA30C60PB	Tube	50	506715

**Equivalent Circuits for Simulation**

\* on die level

 $T_{VJ} = 175\text{ °C}$ 

**Schottky**

$V_{0\max}$	threshold voltage	0.49	V
$R_{0\max}$	slope resistance *	7.2	mΩ

