



preliminary

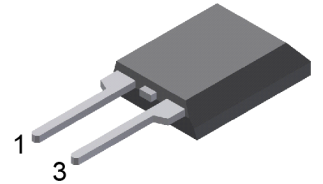
# Schottky Diode

$V_{RRM}$	=	100 V
$I_{FAV}$	=	20 A
$V_F$	=	0.8 V

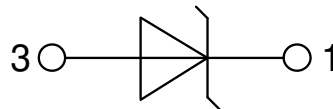
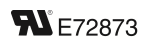
High Performance Schottky Diode  
 Low Loss and Soft Recovery  
 Single Diode

Part number

**DSS20-01AC**



Backside: isolated



### 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: ISOPLUS220

- Isolation Voltage: 3600 V~
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0
- Soldering pins for PCB mounting
- Backside: DCB ceramic
- Reduced weight
- Advanced power cycling

### Disclaimer Notice

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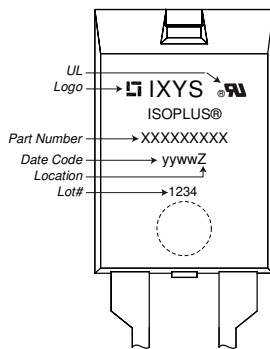
Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
$V_{RSM}$	max. non-repetitive reverse blocking voltage					100	V
$V_{RRM}$	max. repetitive reverse blocking voltage					100	V
$I_R$	reverse current, drain current	$V_R = 100\text{ V}$	$T_{VJ} = 25^\circ\text{C}$			300	$\mu\text{A}$
		$V_R = 100\text{ V}$	$T_{VJ} = 125^\circ\text{C}$			2.5	mA
$V_F$	forward voltage drop	$I_F = 20\text{ A}$	$T_{VJ} = 25^\circ\text{C}$			0.98	V
		$I_F = 40\text{ A}$				1.18	V
		$I_F = 20\text{ A}$	$T_{VJ} = 125^\circ\text{C}$			0.80	V
		$I_F = 40\text{ A}$				1.04	V
$I_{FAV}$	average forward current	$T_C = 140^\circ\text{C}$ rectangular $d = 0.5$	$T_{VJ} = 175^\circ\text{C}$			20	A
$V_{FO}$	threshold voltage	} for power loss calculation only				0.47	V
$r_F$	slope resistance					12.3	m $\Omega$
$R_{thJC}$	thermal resistance junction to case					1.7	K/W
$R_{thCH}$	thermal resistance case to heatsink				0.5		K/W
$P_{tot}$	total power dissipation			$T_C = 25^\circ\text{C}$		90	W
$I_{FSM}$	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$	$T_{VJ} = 45^\circ\text{C}$			120	A
$C_J$	junction capacitance	$V_R = 12\text{ V}$ $f = 1\text{ MHz}$	$T_{VJ} = 25^\circ\text{C}$		146		pF
$E_{AS}$	non-repetitive avalanche energy	$I_{AS} = 5\text{ A}$ $L = 100\ \mu\text{H}$	$T_{VJ} = 25^\circ\text{C}$			1.25	mJ
$I_{AR}$	repetitive avalanche current	$V_A = 1.5 \cdot V_R$ typ. $f = 10\text{ kHz}$				0.5	A



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Package ISOPLUS220		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>				2		g
$F_C$	mounting force with clip		20		60	N
$d_{Spp/App}$	creepage distance on surface / striking distance through air	terminal to terminal	1.0			mm
$d_{Spb/Apb}$		terminal to backside	3.0			mm
$V_{ISOL}$	isolation voltage	t = 1 second	3600			V
		t = 1 minute	3000			V
		50/60 Hz, RMS; $I_{ISOL} \leq 1$ mA				

**Product Marking**



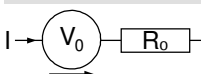
Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSS20-01AC	DSS20-01AC	Tube	50	503346

Similar Part	Package	Voltage class
DSS10-01A	TO-220AC (2)	100
DSS10-01AS	TO-263AB (D2Pak) (2)	100
DSA10I100PM	TO-220ACFP (2)	100

**Equivalent Circuits for Simulation**

\* on die level

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

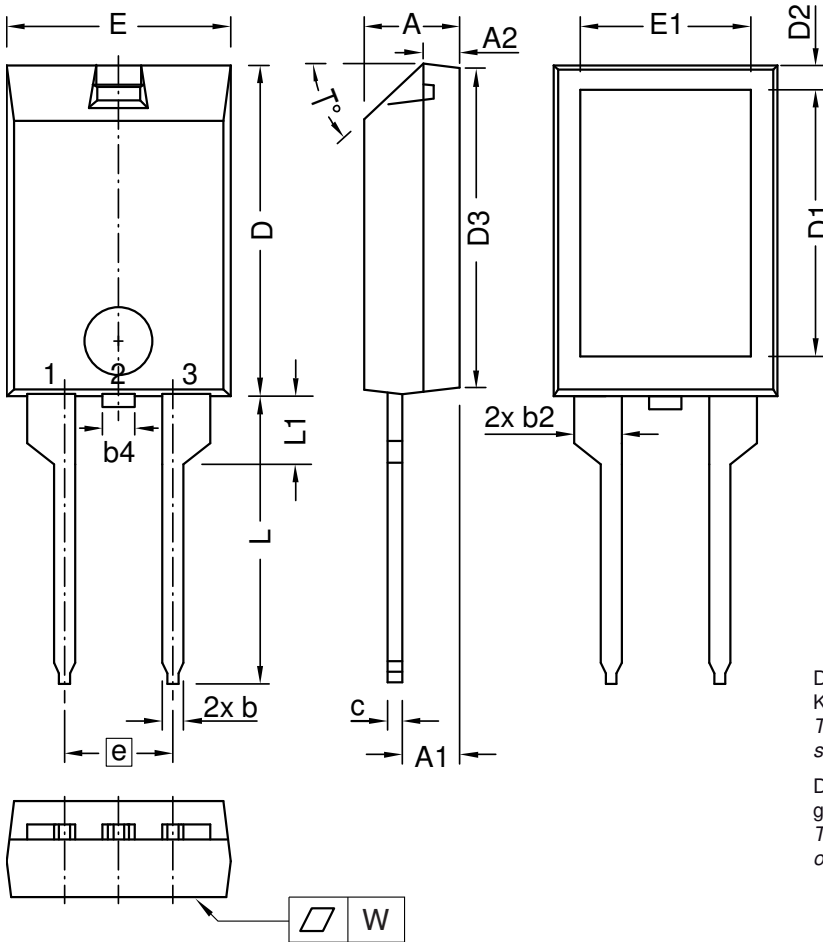


Schottky

$V_{0\ max}$	threshold voltage	0.47	V
$R_{0\ max}$	slope resistance *	9	mΩ



Outlines ISOPLUS220



Dim.	Millimeters		Inches	
	min	max	min	max
A	4.00	5.00	0.157	0.197
A1	2.50	3.00	0.098	0.118
A2	1.60	1.80	0.063	0.071
b	0.90	1.30	0.035	0.051
b2	1.25	1.65	0.049	0.065
b4	2.35	2.55	0.093	0.100
c	0.70	1.00	0.028	0.039
D	15.00	16.00	0.591	0.630
D1	12.00	13.00	0.472	0.512
D2	1.10	1.50	0.043	0.059
D3	14.90	15.50	0.587	0.610
E	10.00	11.00	0.394	0.433
E1	7.50	8.50	0.295	0.335
e	5.08 BSC		0.200 BSC	
L	13.00	14.50	0.512	0.571
L1	3.00	3.50	0.118	0.138
T°	42.5	47.5		
W	-	0.10	-	0.004

Die konvexe Form des Substrates ist typ. < 0.04 mm über der Kunststoffoberfläche der Bauteilunterseite  
The convex bow of substrate is typ. < 0.04 mm over plastic surface level of device bottom side

Die Gehäuseabmessungen entsprechen dem Typ TO-273 gemäß JEDEC außer D und D1.  
This drawing will meet all dimensions requirement of JEDEC outline TO-273 except D and D1.

