preliminary

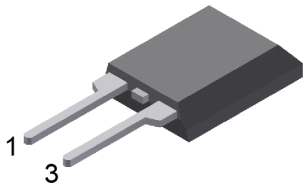
Schottky Diode

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

High Performance Schottky Diode
Low Loss and Soft Recovery
Single Diode

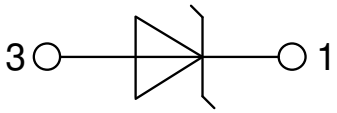
Part number

DSS20-01AC



Backside: isolated

E72873



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: ISOPLUS220

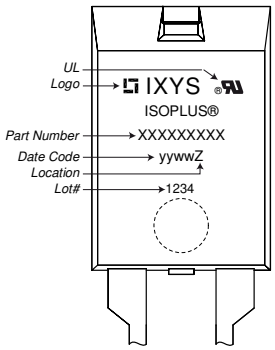
- Isolation Voltage: 3600 V~
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0
- Soldering pins for PCB mounting
- Backside: DCB ceramic
- Reduced weight
- Advanced power cycling

Schottky

Symbol	Definition	Conditions		Ratings min.	typ.	max.	Unit
V_{RSM}	*max. non-repetitive reverse blocking voltage*		T_{VJ} = 25°C			100	V
V_{RRM}	*max. repetitive reverse blocking voltage*		T_{VJ} = 25°C			100	V
I_R	*reverse current, drain current*	V_R = 100 V	T_{VJ} = 25°C			300	µA
		V_R = 100 V	T_{VJ} = 125°C			2.5	mA
V_F	*forward voltage drop*	I_F = 20 A	T_{VJ} = 25°C			0.98	V
		I_F = 40 A				1.18	V
		I_F = 20 A	T_{VJ} = 125°C			0.80	V
		I_F = 40 A				1.04	V
I_{FAV}	*average forward current*	T_C = 140°C	T_{VJ} = 175°C			20	A
		rectangular d = 0.5					
V_{F0}	*threshold voltage* } *for power loss calculation only*		T_{VJ} = 175°C			0.47	V
r_F	*slope resistance* }					12.3	mΩ
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°C			90	W
I_{FSM}	*max. forward surge current*	t = 10 ms; (50 Hz), sine; V_R = 0 V	T_{VJ} = 45°C			120	A
C_J	*junction capacitance*	V_R = 12 V f = 1 MHz	T_{VJ} = 25°C		146		pF
E_{AS}	*non-repetitive avalanche energy*	I_{AS} = 5 A L = 100 µH	T_{VJ} = 25°C			1.25	mJ
I_{AR}	*repetitive avalanche current*	V_A = 1.5·V_R typ. f = 10 kHz				0.5	A

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
Weight					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	50/60 Hz, RMS; I_{ISOL} ≤ 1 mA	3600			V
		t = 1 minute		3000			V

Product Marking

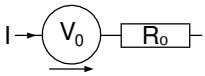


Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSS20-01AC	DSS20-01AC	Tube	50	503346

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

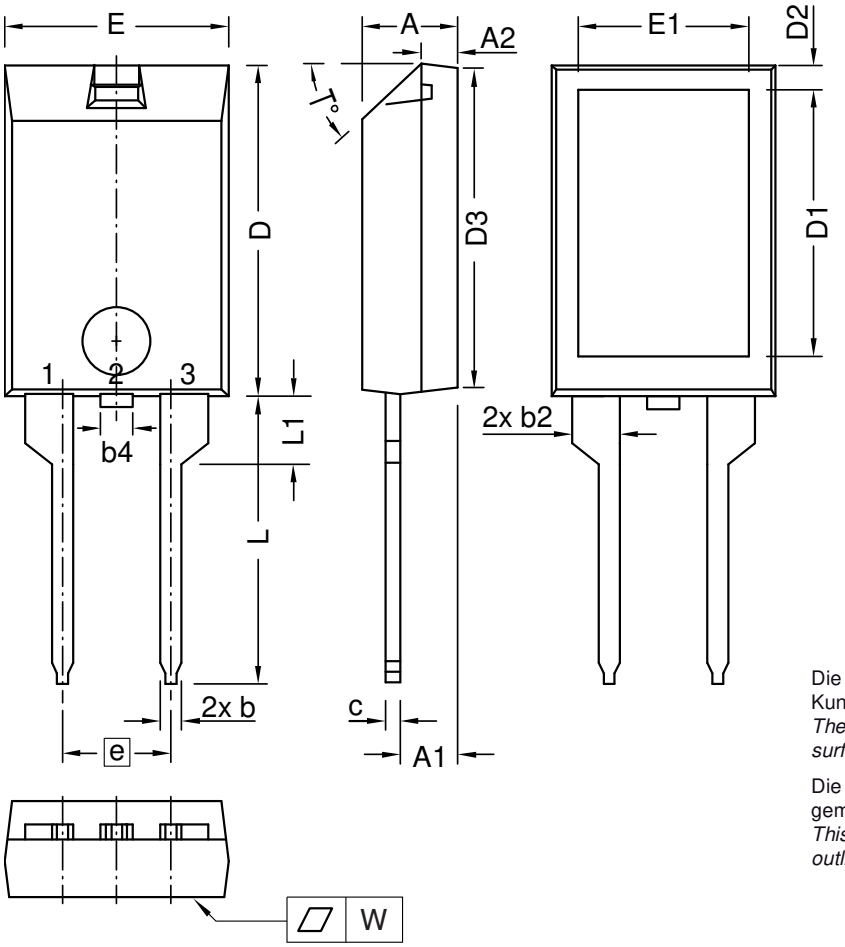
** on die level* T_{VJ} = 175°C



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 requiarement of JEDEC outline TO-273 except D and D1.