



THE DATASHEET OF DSI30-12AC



Standard Rectifier

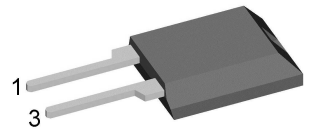
PHASE OUT

Single Diode

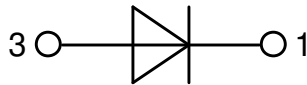
Part number

DSI30-08AC

		Phase out
V_{RRM}	=	800 V
I_{FAV}	=	30 A
V_F	=	V



Backside: isolated

**Features / Advantages:**

- Planar passivated chips
- Very low leakage current
- Very low forward voltage drop
- Improved thermal behaviour

Applications:

- Diode for main rectification
- For single and three phase bridge configurations

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

Terms and Conditions of Usage

The data contained in this product data sheet is exclusively intended for technically trained staff. The user will have to evaluate the suitability of the product for the intended application and the completeness of the product data with respect to his application. The specifications of our components may not be considered as an assurance of component characteristics. The information in the valid application- and assembly notes must be considered. Should you require product information in excess of the data given in this product data sheet or which concerns the specific application of your product, please contact your local sales office.

Due to technical requirements our product may contain dangerous substances. For information on the types in question please contact your local sales office.

Should you intend to use the product in aviation, in health or life endangering or life support applications, please notify. For any such application we urgently recommend

- to perform joint risk and quality assessments;

- the conclusion of quality agreements;

- to establish joint measures of an ongoing product survey, and that we may make delivery dependent on the realization of any such measures.

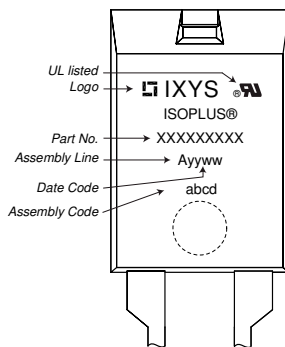
Rectifier				Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit	
V_{RSM}	max. non-repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}C$			900	V	
V_{RRM}	max. repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}C$			800	V	
I_R	reverse current	$V_R = 800 V$			50	μA	
		$V_R = 800 V$			1.5	mA	
V_F	forward voltage drop	$I_F = 45 A$			1.45	V	
		$I_F = 90 A$				V	
		$I_F = 45 A$	$T_{VJ} =$				V
		$I_F = 90 A$	$^{\circ}C$				V
I_{FAV}	average forward current	$T_C = 95^{\circ}C$			30	A	
$I_{F(RMS)}$	RMS forward current	180° sine				A	
V_{FO}	threshold voltage	} for power loss calculation only			0.80	V	
r_F	slope resistance				15	m Ω	
R_{thJC}	thermal resistance junction to case				1.1	K/W	
R_{thCH}	thermal resistance case to heatsink			0.50		K/W	
P_{tot}	total power dissipation		$T_C = 25^{\circ}C$			W	
I_{FSM}	max. forward surge current	t = 10 ms; (50 Hz), sine	$T_{VJ} = 45^{\circ}C$		200	A	
		t = 8,3 ms; (60 Hz), sine	$V_R = 0 V$		215	A	
		t = 10 ms; (50 Hz), sine	$T_{VJ} = 150^{\circ}C$		170	A	
		t = 8,3 ms; (60 Hz), sine	$V_R = 0 V$		185	A	
I^2t	value for fusing	t = 10 ms; (50 Hz), sine	$T_{VJ} = 45^{\circ}C$		200	A ² s	
		t = 8,3 ms; (60 Hz), sine	$V_R = 0 V$		190	A ² s	
		t = 10 ms; (50 Hz), sine	$T_{VJ} = 150^{\circ}C$		145	A ² s	
		t = 8,3 ms; (60 Hz), sine	$V_R = 0 V$		140	A ² s	
C_J	junction capacitance	$V_R = 400 V; f = 1 MHz$	$T_{VJ} = 25^{\circ}C$		10	pF	

PHASE OUT

Phase out

Package ISOPLUS220		Ratings				
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal			35	A
T_{VJ}	virtual junction temperature		-55		150	°C
T_{op}	operation temperature		-55		125	°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	2.1			mm
$d_{Spb/Apb}$		terminal to backside	3.0			mm
V_{ISOL}	isolation voltage	t = 1 second	3600			V
		t = 1 minute	3000			V

Product Marking



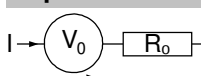
Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSI30-08AC	DSI30-08AC	Tube	50	487627

Similar Part	Package	Voltage class
DSI30-08A	TO-220AC (2)	800
DSI30-08AS	TO-263AB (D2Pak) (2)	800
DSI30-12AC	ISOPLUS220AC (2)	1200
DSI30-12A	TO-220AC (2)	1200
DSI30-12AS	TO-263AB (D2Pak) (2)	1200
DSI30-16A	TO-220AC (2)	1600
DSI30-16AS	TO-263AB (D2Pak) (2)	1600

Equivalent Circuits for Simulation

* on die level

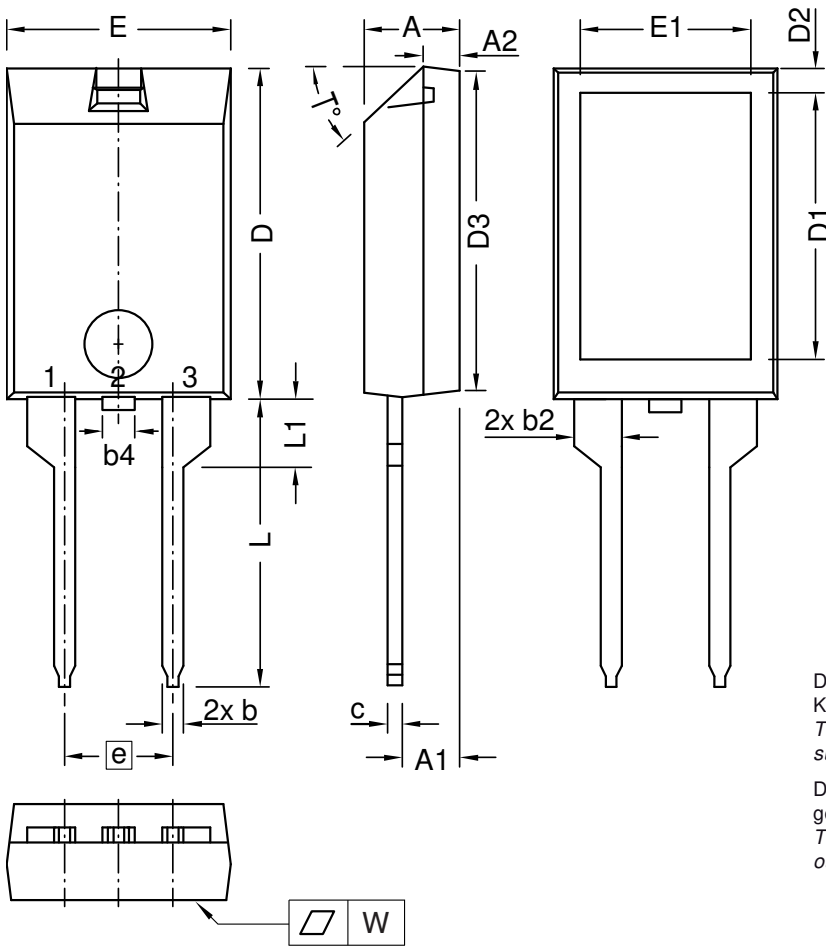
$T_{VJ} = 150\text{ °C}$



Rectifier

$V_{0\ max}$	threshold voltage	0.8	V
$R_{0\ max}$	slope resistance *		mΩ

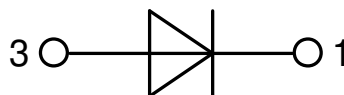
Outlines ISOPLUS220



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.



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