

preliminary

Schottky Diode

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

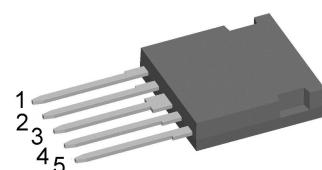
$$I_{DAV} = 45\text{ A}$$

$$V_F = 0.54\text{ V}$$

High Performance Schottky Diode
 Low Loss and Soft Recovery
 3~ Rectifier Bridge

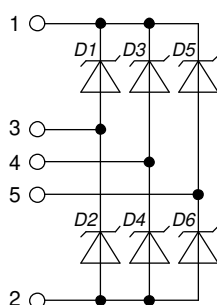
Part number

FUS45-0045B



Backside: isolated

 E72873



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: i4-Pac

- Isolation Voltage: 3000 V~
- Industry convenient outline
- RoHS compliant
- Epoxy meets UL 94V-0
- Soldering pins for PCB mounting
- Backside: DCB ceramic
- Reduced weight
- Advanced power cycling

Disclaimer Notice

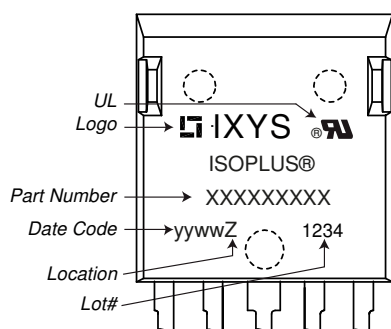
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Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	max. non-repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}\text{C}$					V
V_{RRM}	max. repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}\text{C}$				45	V
I_R	reverse current, drain current	$V_R = 45\text{ V}$	$T_{VJ} = 25^{\circ}\text{C}$			5	mA
		$V_R = 45\text{ V}$	$T_{VJ} = 125^{\circ}\text{C}$			50	mA
V_F	forward voltage drop	$I_F = 15\text{ A}$	$T_{VJ} = 25^{\circ}\text{C}$			0.58	V
		$I_F = 45\text{ A}$				0.82	V
		$I_F = 15\text{ A}$	$T_{VJ} = 125^{\circ}\text{C}$			0.54	V
		$I_F = 45\text{ A}$				0.78	V
I_{DAV}	bridge output current	$T_C = 90^{\circ}\text{C}$ rectangular $d = 0.5$	$T_{VJ} = 150^{\circ}\text{C}$			45	A
V_{F0}	threshold voltage	} for power loss calculation only		$T_{VJ} = 150^{\circ}\text{C}$		0.31	V
r_F	slope resistance					14.9	mΩ
R_{thJC}	thermal resistance junction to case					3.1	K/W
R_{thCH}	thermal resistance case to heatsink				0.2		K/W
P_{tot}	total power dissipation	$T_C = 25^{\circ}\text{C}$				40	W
I_{FSM}	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$	$T_{VJ} = 45^{\circ}\text{C}$			150	A
C_J	junction capacitance	$V_R = 5\text{ V}$ $f = 1\text{ MHz}$	$T_{VJ} = 25^{\circ}\text{C}$		497		pF

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Package i4-Pac			Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal			50	A
T_{VJ}	virtual junction temperature		-55		150	°C
T_{op}	operation temperature		-55		125	°C
T_{stg}	storage temperature		-55		150	°C
Weight				6		g
F_c	mounting force with clip		20		120	N
$d_{Spp/App}$	creepage distance on surface / striking distance through air	terminal to terminal	1.7			mm
$d_{Spb/Apb}$		terminal to backside	5.1			mm
V_{ISOL}	isolation voltage	t = 1 second	3000			V
		t = 1 minute	2500			V

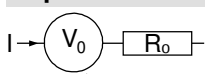
Product Marking



Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	FUS45-0045B	FUS45-0045B	Tube	25	497762

Equivalent Circuits for Simulation

* on die level

 $T_{VJ} = 150^{\circ}\text{C}$


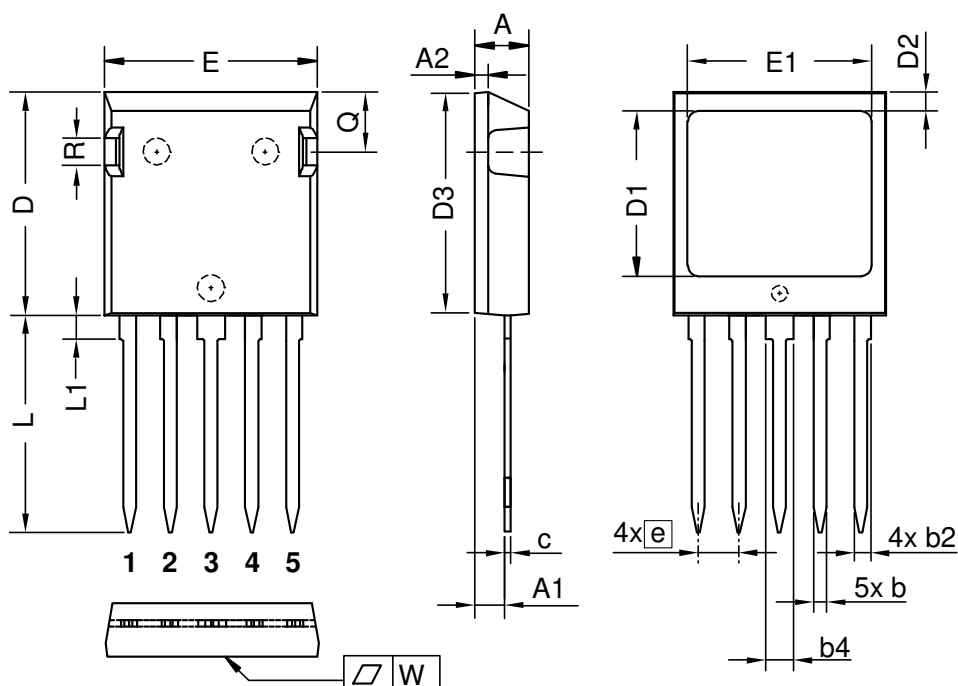
Schottky

 $V_{0\max}$ threshold voltage 0.31

V

 $R_{0\max}$ slope resistance * 12.4

mΩ

Outlines i4-Pac


Dim.	Millimeter		Inches	
	min	max	min	max
A	4.83	5.21	0.190	0.205
A1	2.59	3.00	0.102	0.118
A2	1.17	2.16	0.046	0.085
b	1.14	1.40	0.045	0.055
b2	1.47	1.73	0.058	0.068
b4	2.54	2.79	0.100	0.110
c	0.51	0.74	0.020	0.029
D	20.80	21.34	0.819	0.840
D1	14.99	15.75	0.590	0.620
D2	1.65	2.03	0.065	0.080
D3	20.30	20.70	0.799	0.815
E	19.56	20.29	0.770	0.799
E1	16.76	17.53	0.660	0.690
e	3.81 BSC		0.150 BSC	
L	19.81	21.34	0.780	0.840
L1	2.11	2.59	0.083	0.102
Q	5.33	6.20	0.210	0.244
R	2.54	4.57	0.100	0.180
W	-	0.10	-	0.004

Die konvexe Form des Substrates ist typ. < 0.05 mm über der Kunststoffoberfläche der Bauteilunterseite
 The convexbow of substrate is typ. < 0.05 mm over plastic surface level of device bottom side

