

Schottky Diode

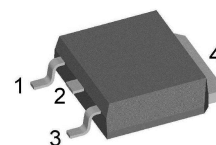
$$\begin{aligned} V_{RRM} &= 200\text{ V} \\ I_{FAV} &= 15\text{ A} \\ V_F &= 0.78\text{ V} \end{aligned}$$

High Performance Schottky Diode
 Low Loss and Soft Recovery
 Single Diode

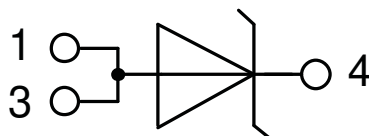
Part number

DSA15IM200UC

Marking on Product: *SFMAUI*



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-252 (DPak)

- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0

Disclaimer Notice

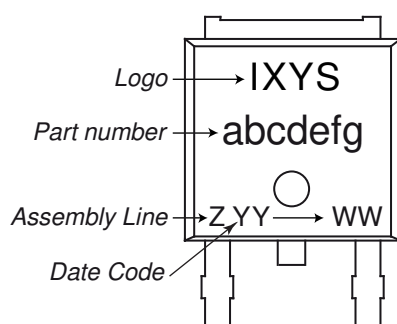
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Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	max. non-repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}\text{C}$				200	V
V_{RRM}	max. repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}\text{C}$				200	V
I_R	reverse current, drain current	$V_R = 200\text{ V}$	$T_{VJ} = 25^{\circ}\text{C}$			250	μA
		$V_R = 200\text{ V}$	$T_{VJ} = 125^{\circ}\text{C}$			2.5	mA
V_F	forward voltage drop	$I_F = 15\text{ A}$	$T_{VJ} = 25^{\circ}\text{C}$			0.94	V
		$I_F = 30\text{ A}$				1.10	V
		$I_F = 15\text{ A}$	$T_{VJ} = 125^{\circ}\text{C}$			0.78	V
		$I_F = 30\text{ A}$				0.95	V
I_{FAV}	average forward current	$T_C = 150^{\circ}\text{C}$ rectangular $d = 0.5$	$T_{VJ} = 175^{\circ}\text{C}$			15	A
V_{F0}	threshold voltage	} for power loss calculation only		$T_{VJ} = 175^{\circ}\text{C}$		0.53	V
r_F	slope resistance					10.8	m Ω
R_{thJC}	thermal resistance junction to case					2	K/W
R_{thCH}	thermal resistance case to heatsink				0.50		K/W
P_{tot}	total power dissipation	$T_C = 25^{\circ}\text{C}$				75	W
I_{FSM}	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$	$T_{VJ} = 45^{\circ}\text{C}$			200	A
C_J	junction capacitance	$V_R = 24\text{ V}$ $f = 1\text{ MHz}$	$T_{VJ} = 25^{\circ}\text{C}$		67		pF

Package TO-252 (DPak)			Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal ¹⁾			20	A
T_{VJ}	virtual junction temperature		-55		175	°C
T_{op}	operation temperature		-55		150	°C
T_{stg}	storage temperature		-55		150	°C
Weight				0.3		g
F_c	mounting force with clip		20		60	N

¹⁾ I_{RMS} is typically limited by the pin-to-chip resistance (1); or by the current capability of the chip (2). In case of (1) and a product with multiple pins for one chip-potential, the current capability can be increased by connecting the pins as one contact.

Product Marking



Part description

D = Diode
 S = Schottky Diode
 A = low VF
 15 = Current Rating [A]
 IM = Single Diode
 200 = Reverse Voltage [V]
 UC = TO-252AA (DPak)

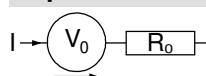
Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSA15IM200UC-TRL	SFMAUI	Tape & Reel	2500	510408
Alternative	DSA15IM200UC-TUB	SFMAUI	Tube	70	523494

Similar Part	Package	Voltage class
DSB15IM30UC	TO-252AA (DPak)	30
DSA15IM45UC	TO-252AA (DPak)	45
DSA10IM100UC	TO-252AA (DPak)	100
DSA15IM150UC	TO-252AA (DPak)	150

Equivalent Circuits for Simulation

* on die level

$T_{VJ} = 175\text{ °C}$



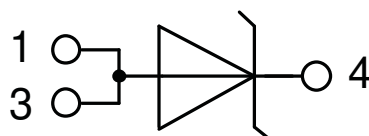
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$V_{0\text{ max}}$ threshold voltage 0.53

$R_{0\text{ max}}$ slope resistance * 7.6

V

mΩ

Outlines TO-252 (DPak)


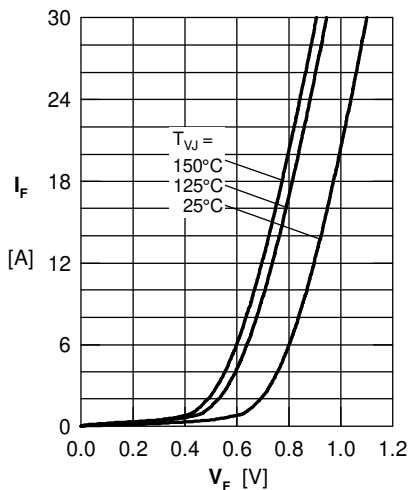
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Fig. 1 Maximum forward voltage drop characteristics

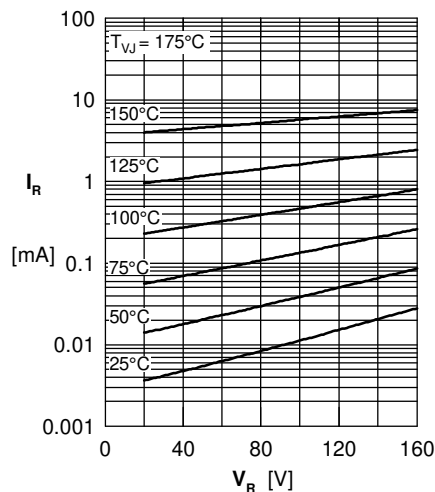
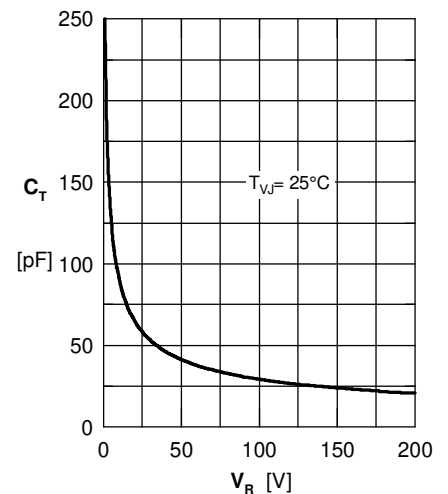
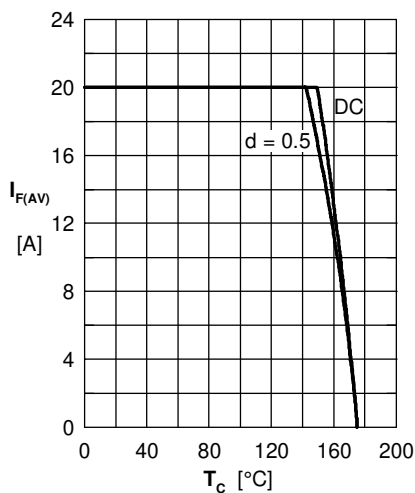
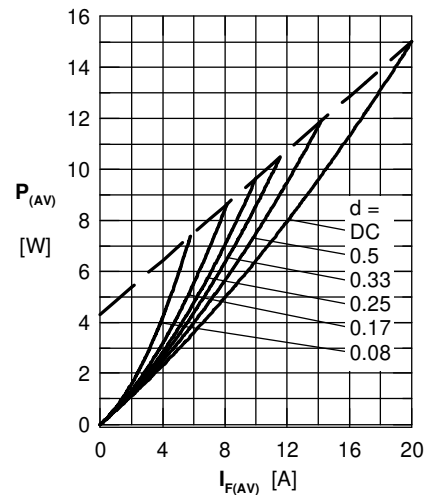

 Fig. 2 Typ. reverse current I_R vs. reverse voltage V_R

 Fig. 3 Typ. junction capacitance C_T vs. reverse voltage V_R

 Fig. 4 Avg: forward current $I_{F(AV)}$ vs. case temperature T_c


Fig. 5 Forward power loss characteristics

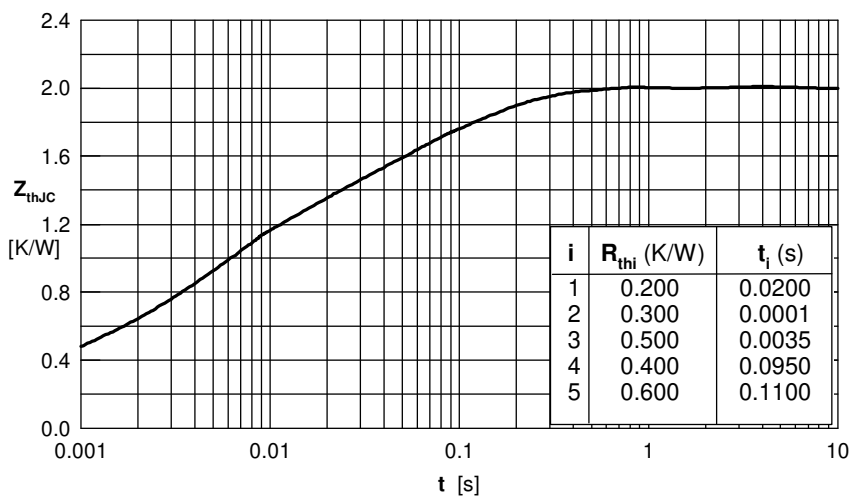


Fig. 6 Transient thermal impedance junction to case

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