



Schottky Diode

$$V_{RRM} = 150\text{ V}$$

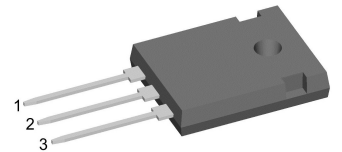
$$I_{FAV} = 2 \times 30\text{ A}$$

$$V_F = 0,66\text{ V}$$

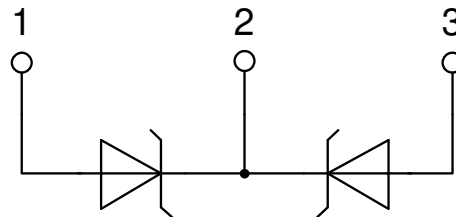
High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode

Part number

DSSK60-015A



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-247

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

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Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	max. non-repetitive reverse blocking voltage					150	V
V_{RRM}	max. repetitive reverse blocking voltage					150	V
I_R	reverse current, drain current	$V_R = 150\text{ V}$	$T_{VJ} = 25^\circ\text{C}$			2	mA
		$V_R = 150\text{ V}$	$T_{VJ} = 125^\circ\text{C}$			5	mA
V_F	forward voltage drop	$I_F = 30\text{ A}$	$T_{VJ} = 25^\circ\text{C}$			0,81	V
		$I_F = 60\text{ A}$				0,93	V
		$I_F = 30\text{ A}$	$T_{VJ} = 125^\circ\text{C}$			0,66	V
		$I_F = 60\text{ A}$				0,80	V
I_{FAV}	average forward current	$T_C = 135^\circ\text{C}$ rectangular $d = 0.5$	$T_{VJ} = 175^\circ\text{C}$			30	A
V_{FO}	threshold voltage	} for power loss calculation only				0,43	V
r_F	slope resistance					4,8	mΩ
R_{thJC}	thermal resistance junction to case					0,8	K/W
R_{thCH}	thermal resistance case to heatsink				0,25		K/W
P_{tot}	total power dissipation			$T_C = 25^\circ\text{C}$		190	W
I_{FSM}	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$	$T_{VJ} = 45^\circ\text{C}$			600	A
C_J	junction capacitance	$V_R = 24\text{ V}$ $f = 1\text{ MHz}$	$T_{VJ} = 25^\circ\text{C}$		481		pF
E_{AS}	non-repetitive avalanche energy	$I_{AS} = 4\text{ A}$ $L = 100\text{ }\mu\text{H}$	$T_{VJ} = 25^\circ\text{C}$			0,8	mJ
I_{AR}	repetitive avalanche current	$V_A = 1.5 \cdot V_R$ typ. $f = 10\text{ kHz}$				0,4	A



Package TO-247			Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal ¹⁾			70	A
T_{VJ}	virtual junction temperature		-55		175	°C
T_{op}	operation temperature		-55		150	°C
T_{stg}	storage temperature		-55		150	°C
Weight				6		g
M_D	mounting torque		0,8		1,2	Nm
F_C	mounting force with clip		20		120	N

Product Marking



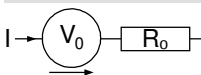
Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSSK60-015A	DSSK60-015A	Tube	30	501625

Similar Part	Package	Voltage class
DSSK60-015AR	ISOPLUS247 (3)	150

Equivalent Circuits for Simulation

** on die level*

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

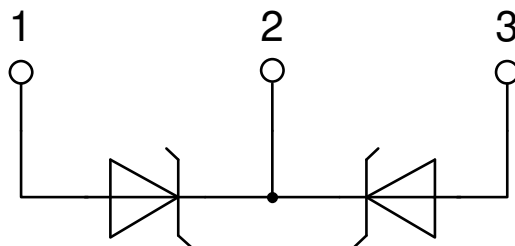


Schottky

$V_{0 \max}$	threshold voltage	0,43	V
$R_{0 \max}$	slope resistance *	1,7	mΩ



Outlines TO-247



Schottky

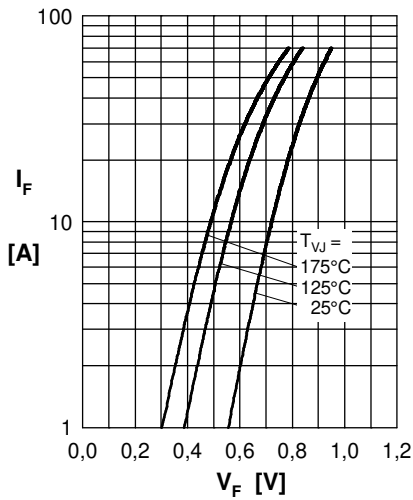


Fig. 1 Max. forward voltage drop characteristics

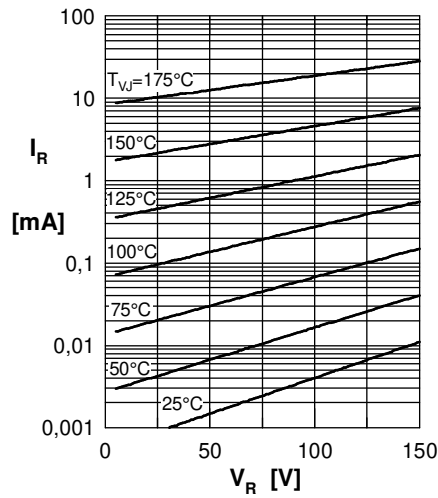


Fig. 2 Typ. reverse current I_R vs. reverse voltage V_R

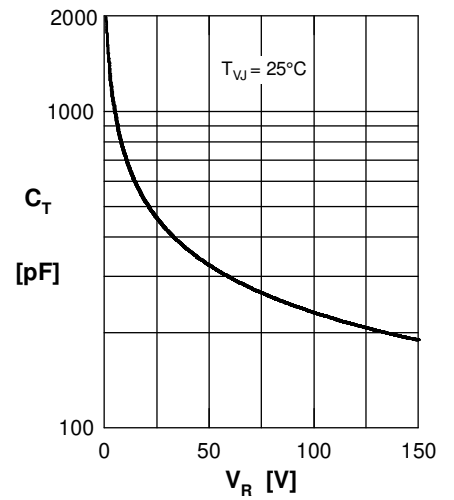


Fig. 3 Typ. junction capacitance C_T vs. reverse voltage V_R

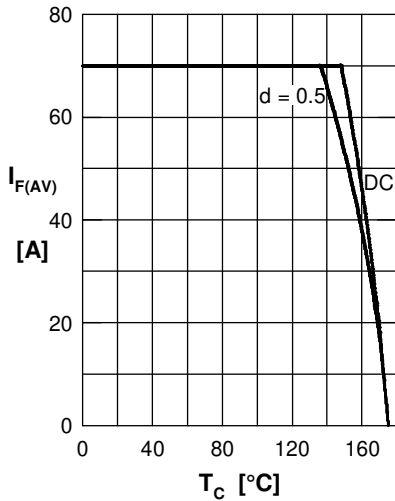


Fig. 4 Average forward current $I_{F(AV)}$ vs. case temp. T_C

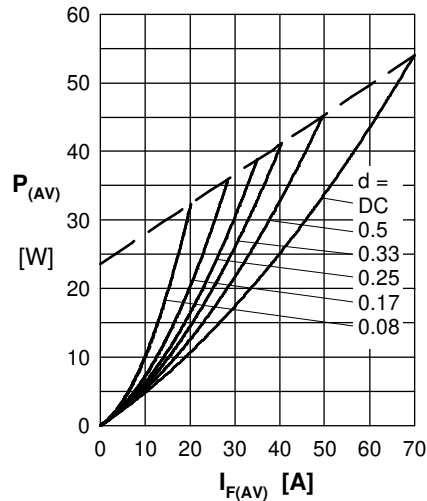


Fig. 5 Forward power loss characteristics

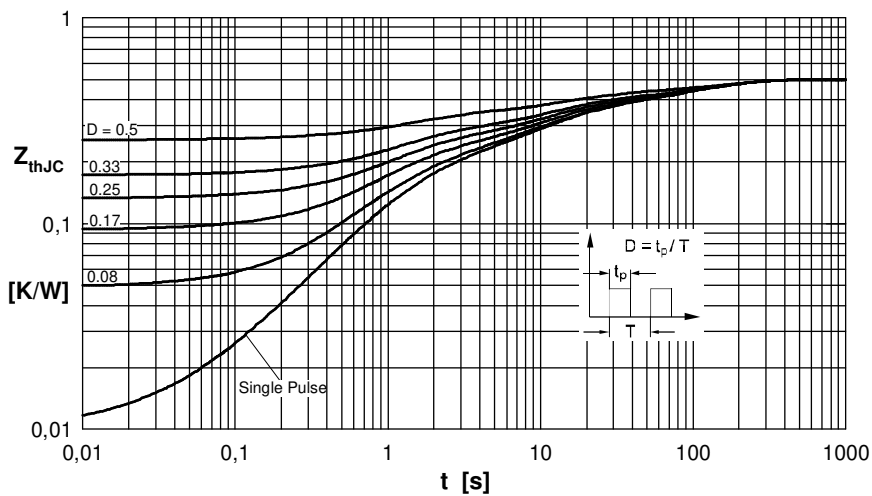


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode