

# Schottky Diode

preliminary

$$V_{RRM} = 25 \text{ V}$$

$$I_{FAV} = 6 \text{ A}$$

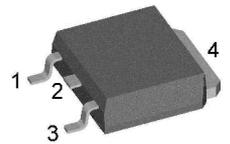
$$V_F = 0.3 \text{ V}$$

High Performance Schottky Diode  
Low Loss and Soft Recovery  
Single Diode

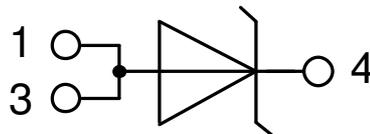
## Part number

**DSS6-0025BS**

Marking on Product: 6Y025AS



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

## Terms 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 the sales office, which is responsible for you.

Due to technical requirements our product may contain dangerous substances. For information on the types in question please contact the sales office, which is responsible for you.

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;

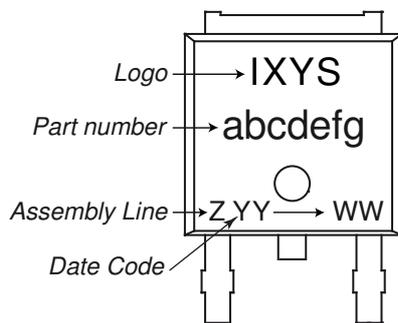
- to establish joint measures of an ongoing product survey, and that we may make delivery dependent on the realization of any such measures.

Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
$V_{RSM}$	max. non-repetitive reverse blocking voltage					25	V
$V_{RRM}$	max. repetitive reverse blocking voltage					25	V
$I_R$	reverse current, drain current	$V_R = 25\text{ V}$		$T_{VJ} = 25^\circ\text{C}$		5	mA
		$V_R = 25\text{ V}$		$T_{VJ} = 100^\circ\text{C}$		40	mA
$V_F$	forward voltage drop	$I_F = 6\text{ A}$		$T_{VJ} = 25^\circ\text{C}$		0.40	V
		$I_F = 12\text{ A}$				0.47	V
		$I_F = 6\text{ A}$		$T_{VJ} = 125^\circ\text{C}$		0.30	V
		$I_F = 12\text{ A}$				0.40	V
$I_{FAV}$	average forward current	$T_C = 140^\circ\text{C}$	rectangular	$T_{VJ} = 150^\circ\text{C}$		6	A
$V_{FO}$	threshold voltage	} for power loss calculation only				0.18	V
$r_F$	slope resistance					15.9	mΩ
$R_{thJC}$	thermal resistance junction to case					3	K/W
$R_{thCH}$	thermal resistance case to heatsink			0.50			K/W
$P_{tot}$	total power dissipation			$T_C = 25^\circ\text{C}$		40	W
$I_{FSM}$	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$		$T_{VJ} = 45^\circ\text{C}$		120	A
$C_J$	junction capacitance	$V_R = 5\text{ V}$	$f = 1\text{ MHz}$	$T_{VJ} = 25^\circ\text{C}$		639	pF

preliminary

Package TO-252 (DPak)			Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
$I_{RMS}$	RMS current	per terminal <sup>1)</sup>			20	A
$T_{VJ}$	virtual junction temperature		-55		150	°C
$T_{op}$	operation temperature		-55		125	°C
$T_{stg}$	storage temperature		-55		150	°C
<b>Weight</b>				0.3		g
$F_C$	mounting force with clip		20		60	N

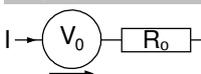
<sup>1)</sup>  $I_{RMS}$  is typically limited by the pin-to-chip resistance (1); or by the current capability of the chip (2). In case of (1) and a product with multiple pins for one chip-potential, the current capability can be increased by connecting the pins as one contact.

**Product Marking**


Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSS6-0025BS	6Y025AS	Tape & Reel	2500	499064

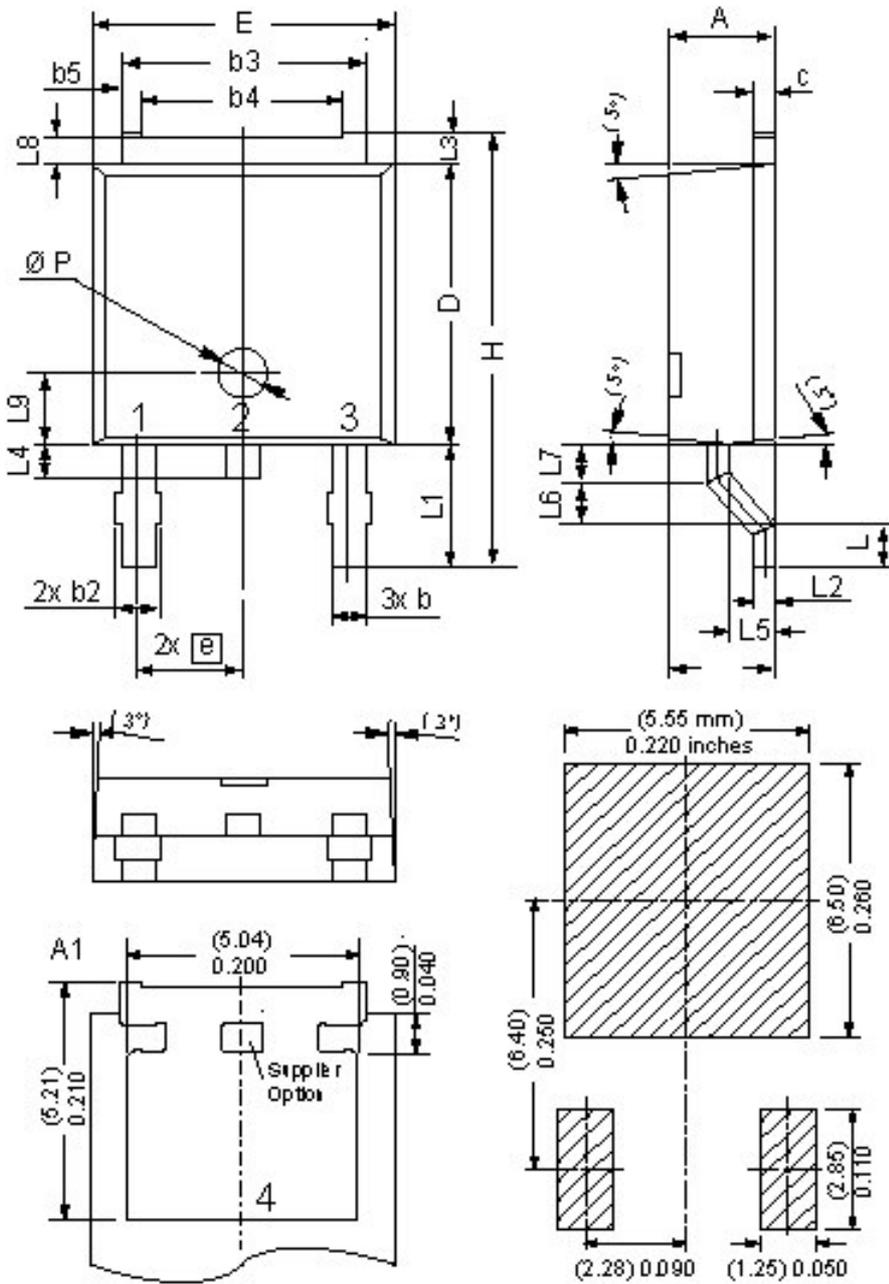
**Equivalent Circuits for Simulation**

\* on die level

 $T_{VJ} = 150\text{ °C}$ 

**Schottky**

$V_{0\ max}$	threshold voltage	0.18	V
$R_{0\ max}$	slope resistance *	12.8	mΩ

## Outlines TO-252 (DPak)



Dim	Millimeters		Inches	
	min	max	min	max
A	2.20	2.40	0.087	0.094
A1	2.10	2.50	0.083	0.098
b	0.66	0.86	0.026	0.034
b2	-	0.96	-	0.038
b3	5.04	5.64	0.198	0.222
b4	4.34 BSC		0.171 BSC	
b5	0.50 BSC		0.020 BSC	
c	0.40	0.86	0.016	0.034
D	5.90	6.30	0.232	0.248
E	6.40	6.80	0.252	0.268
e	2.10	2.50	0.083	0.098
H	9.20	10.10	0.362	0.398
L	0.55	1.28	0.022	0.050
L1	2.50	2.90	0.098	0.114
L2	0.40	0.60	0.016	0.024
L3	0.50	0.90	0.020	0.035
L4	0.60	1.00	0.024	0.039
L5	0.82	1.22	0.032	0.048
L6	0.79	0.99	0.031	0.039
L7	0.81	1.01	0.032	0.040
L8	0.40	0.80	0.016	0.031
L9	1.50 BSC		0.059 BSC	
Ø P	1.00 BSC		0.039 BSC	

Recommended min. footprint

