

preliminary

HiPerFRED

High Performance Fast Recovery Diode
Low Loss and Soft Recovery
Single Diode

Part number

DSEP6-06BS

Marking on Product: P6QGUI



Backside: cathode

Features / Advantages:

- Planar passivated chips
- Very low leakage current
- Very short recovery time
- Improved thermal behaviour
- Very low I_{rm} -values
- Very soft recovery behaviour
- Avalanche voltage rated for reliable operation
- Soft reverse recovery for low EMI/RFI
- Low I_{rm} reduces:
 - Power dissipation within the diode
 - Turn-on loss in the commutating switch

Applications:

- Antiparallel diode for high frequency switching devices
- Antisaturation diode
- Snubber diode
- Free wheeling diode
- Rectifiers in switch mode power supplies (SMPS)
- Uninterruptible power supplies (UPS)

Package:

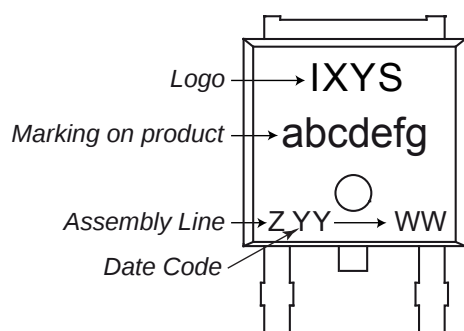
- Housing: TO-252 (DPak)
- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

Ratings

Symbol	Definition	Conditions	min.	typ.	max.	Unit
V_{RRM}	max. repetitive reverse voltage	$T_{VJ} = 25^{\circ}\text{C}$			600	V
I_R	reverse current	$V_R = 600\text{ V}$ $T_{VJ} = 25^{\circ}\text{C}$			50	μA
		$V_R = 600\text{ V}$ $T_{VJ} = 150^{\circ}\text{C}$			0.2	mA
V_F	forward voltage	$I_F = 6\text{ A}$ $T_{VJ} = 25^{\circ}\text{C}$			2.66	V
		$I_F = 12\text{ A}$			3.30	V
		$I_F = 6\text{ A}$ $T_{VJ} = 150^{\circ}\text{C}$			1.77	V
		$I_F = 12\text{ A}$			2.29	V
I_{FAV}	average forward current	rectangular $d = 0.5$ $T_C = 140^{\circ}\text{C}$			6	A
V_{F0}	threshold voltage	$T_{VJ} = 175^{\circ}\text{C}$ } for power loss calculation only			1.13	V
r_F	slope resistance				76	m Ω
R_{thJC}	thermal resistance junction to case				2.80	K/W
T_{VJ}	virtual junction temperature		-55		175	$^{\circ}\text{C}$
P_{tot}	total power dissipation	$T_C = 25^{\circ}\text{C}$			55	W
I_{FSM}	max. forward surge current	$t = 10\text{ ms}$ (50 Hz), sine $T_{VJ} = 45^{\circ}\text{C}$			40	A
I_{RM}	max. reverse recovery current	$T_{VJ} = 25^{\circ}\text{C}$		1.5		A
		$I_F = 6\text{ A}; V_R = 300\text{ V}$ $T_{VJ} = 100^{\circ}\text{C}$		3		A
t_{rr}	reverse recovery time	$-di_F/dt = 200\text{ A}/\mu\text{s}$ $T_{VJ} = 25^{\circ}\text{C}$		15		ns
		$T_{VJ} = 100^{\circ}\text{C}$		60		ns
C_J	junction capacitance	$V_R = 400\text{ V}; f = 1\text{ MHz}$ $T_{VJ} = 25^{\circ}\text{C}$		5		pF

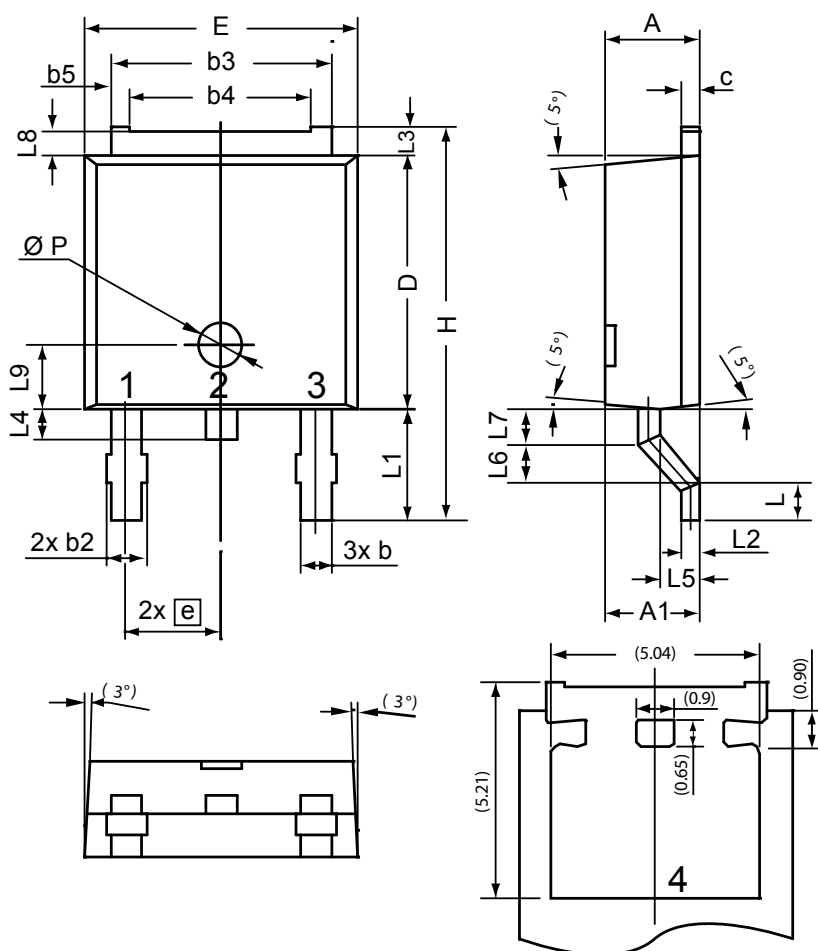
Symbol	Definition	Conditions	Ratings			
			min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal			20	A
R_{thCH}	thermal resistance case to heatsink			0.50		K/W
T_{stg}	storage temperature		-55		150	°C
Weight				0.3		g
F_c	mounting force with clip		20		60	N

Product Marking



Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSEP6-06BS	P6QGUI	Tape & Reel	2500	502162

Similar Part	Package	Voltage Class
DSEP6-06AS	TO-252AA (DPak)	600

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	0.60	0.016	0.024
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	9.80	0.362	0.386
L	0.55	1.02	0.022	0.040
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	