

BYP53 / BYP54

25A Silicon Power Rectifier Diode

Description

The BYP53/54 are plastic sealed 25A- diodes, which are available in different reverse voltage classes up to 800V.

The diodes can be delivered with limited forward voltage and reverse current differences for parallel connecting in rectifier stacks and back-off-diodes

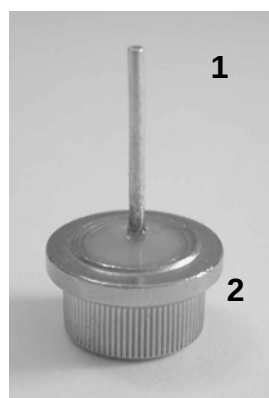
Features

- Forward current 25A
- Reverse voltage 75V – 800V
- Hermetic press-fit package
- Available in different modifications of the package

Applications

- Power supplies
- Rectifier diode in car generators
- Rectifier bridges/stacks
- Back-off-diodes

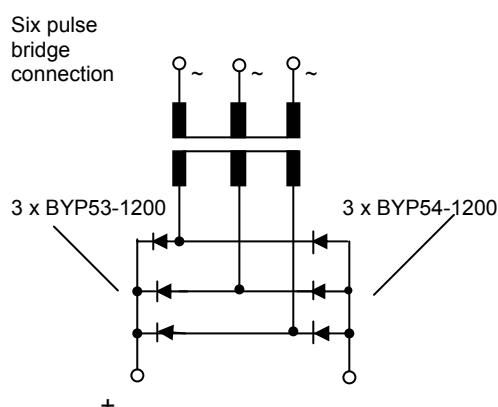
Pinout details



BYP53: 1 - cathode
2 - anode

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2 - cathode

Typical application circuit

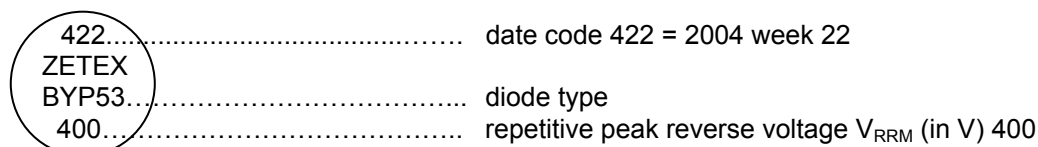


Ordering information

Device	Quantity per box	Options
BYP53-75; ...; BYP53-800	400	The package quantities for the different package modifications are included in "PressFitPackageModifications.pdf"
BYP54-75; ...; BYP54-800	400	

Device marking

Devices are identified by type. Colour of marking: BYP53- black, BYP54 – red



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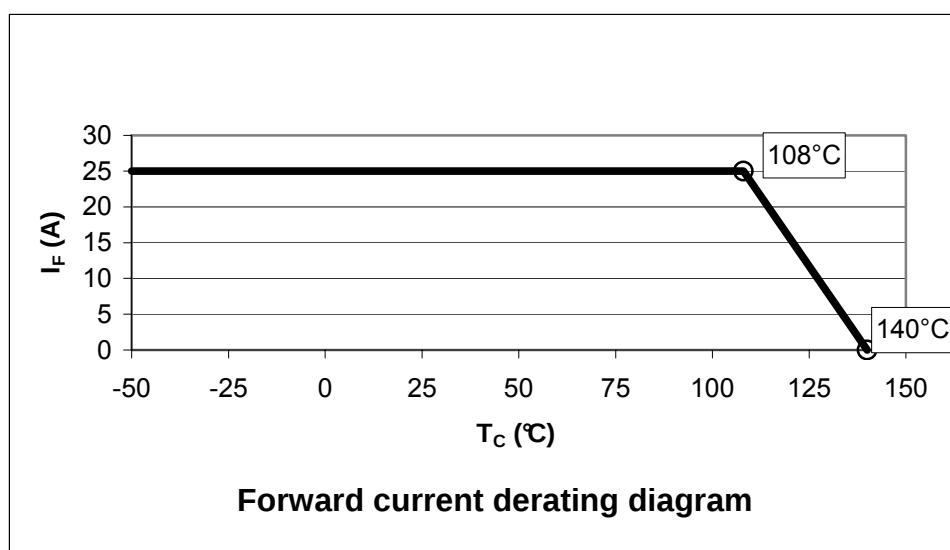
Absolute maximum ratings (at $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter			Symbol		Unit	Test condition
Repetitive peak reverse voltage	BYP53-75	BYP54-75	V_{RRM}	75	V	$T_c = 140^{\circ}\text{C}$
	BYP53-100	BYP54-100		100		
	BYP53-150	BYP54-150		150		
	BYP53-200	BYP54-200		200		
	BYP53-300	BYP54-300		300		
	BYP53-400	BYP54-400		400		
	BYP53-500	BYP54-500		500		
	BYP53-600	BYP54-600		600		
	BYP53-700	BYP54-700		700		
	BYP53-800	BYP54-800		800		
Forward current, arithmetic value			I_{FAV}	25	A	
Surge forward current			I_{FSM}	425	A	half-sine wave, $\leq 10\text{ ms}$
				350		$T_J = 175^{\circ}\text{C}$ half-sine wave, $\leq 10\text{ ms}$
Maximum rated value			$\int i^2 dt$	900	A^2s	half-sine wave, $\leq 10\text{ ms}$
				780		$T_J = 175^{\circ}\text{C}$ half-sine wave, $\leq 10\text{ ms}$
Repetitive peak forward current			$I_{FRM} = \pi \cdot I_{FAV}$	79	A	$f = >15\text{ Hz}$
Effective forward current			I_{FRMS}	45	A	
Junction temperature			T_{Jmax}	175	$^{\circ}\text{C}$	
Storage temperature range			T_{stg}	- 50 to + 140	$^{\circ}\text{C}$	

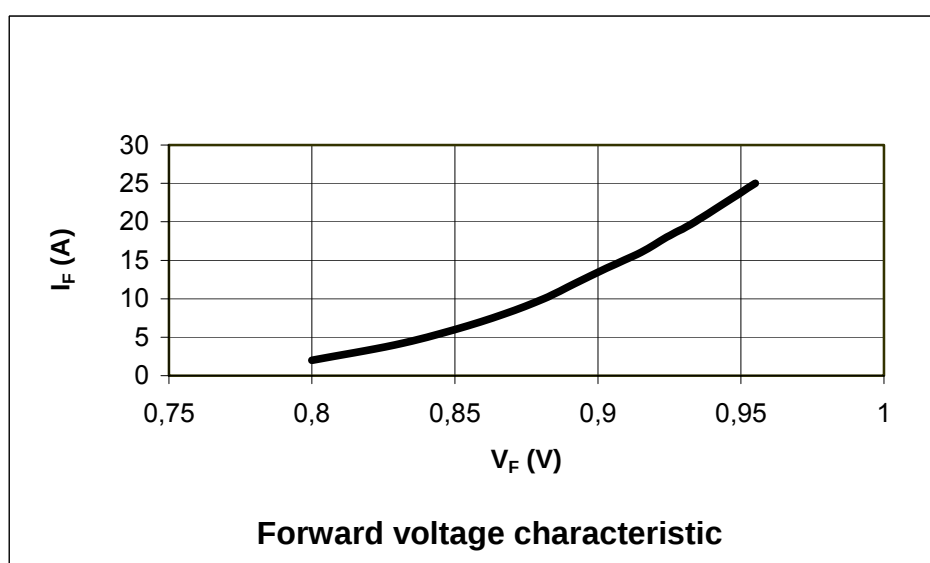
Thermal resistance

Parameter	Symbol	Value	Unit
Junction to case	$R_{\theta JC}$	1.2	$^{\circ}\text{C/W}$

Thermal characteristics



Electrical characteristics (at $T_{\text{amb}} = 25^{\circ}\text{C}$ unless otherwise stated)



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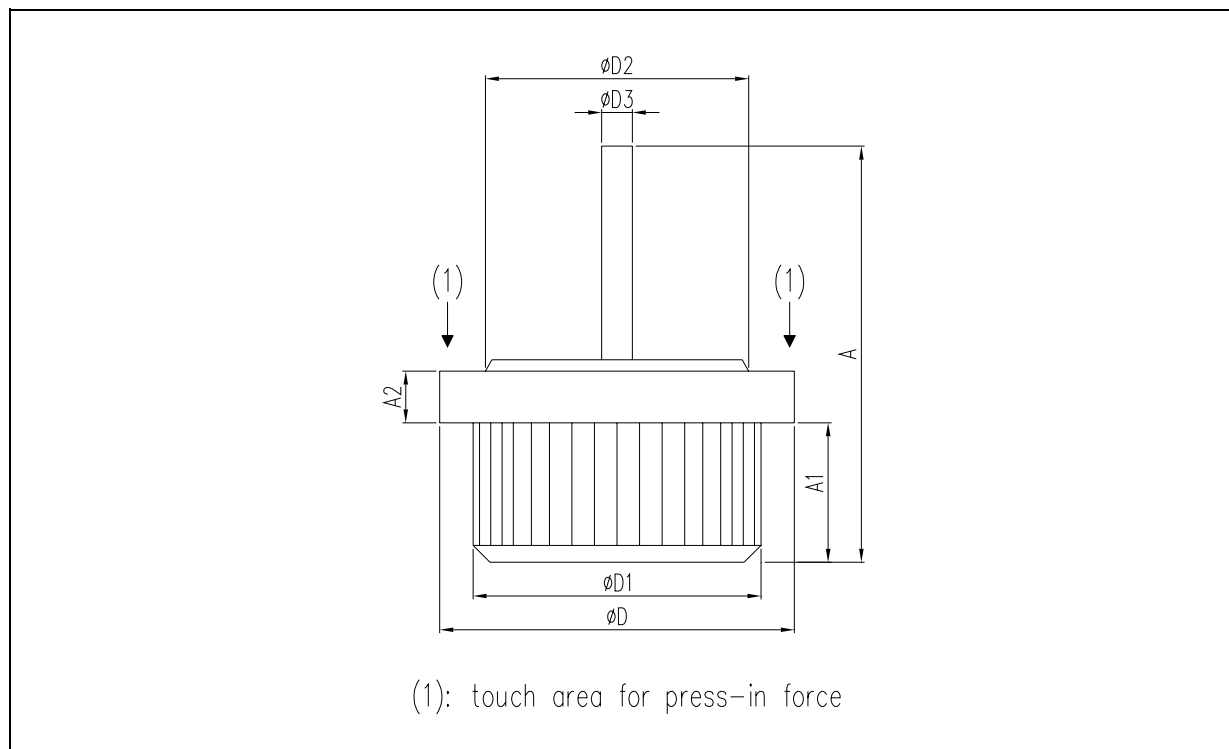
Parameter		Symbol	Min.	Typ.	Max.	Unit	Test conditions
Forward voltage	BYP53-75...800 BYP54-75...800	V_F	-	0.95	1.1	V	$I_F = 25\text{ A}$, measuring time 10ms (half-sine wave)
Forward voltage (information values)	BYP53-75...800 BYP54-75...800	V_F	-	-	1.2	V	$I_F = 35\text{ A}$,
Reverse current	BYP53-75...150 BYP54-75...150	I_{RRM}	-	-	3	mA	$T_J = 140^{\circ}\text{C}$, at V_{RRM}
	BYP53-200...800 BYP54-200...800		-	-	1.5		
	BYP53-75...400 BYP54-75...400	I_{RRM}	-	-	0.25	mA	at V_{RRM}
	BYP53-500...800 BYP54-500...800		-	-	0.1		
Threshold voltage (information value)		$V_{(FO)}$	-	0.66	-	V	$T_J = 175^{\circ}\text{C}$
Slope resistance (information value)		r_F	-	5.75	-	m Ω	$T_J = 175^{\circ}\text{C}$

Options: Electrical characteristics for parallel connecting

(at $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated)

Option	Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
1	Forward voltage difference in one category of forward voltage	ΔV_F	-	-	0.05	V	$I_F = 25\text{ A}$, measuring time 10ms (half-sine wave)
2	Reverse current in one category of forward voltage (only for BYP53-300...800 and BYP54-300...800)	I_R	-	-	0.01	mA	at V_{RRM}

Packaging details



Package dimensions

Dimensions in millimeters are control dimensions, dimensions in inches are approximate

DIM	Millimeters			Inches		
	MIN	TYP	MAX	MIN	TYP	MAX
A	18,00	18,50	19,00	0,709	0,728	0,748
A1	5,90	6,10	6,30	0,232	0,240	0,248
A2	2,10	2,30	2,50	0,083	0,091	0,098
D	15,50	15,70	15,90	0,610	0,618	0,626
D1	12,72	12,77	12,82	0,501	0,503	0,505
D2	11,50	11,70	11,90	0,453	0,461	0,469
D3	1,33	1,36	1,39	0,052	0,054	0,055

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