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

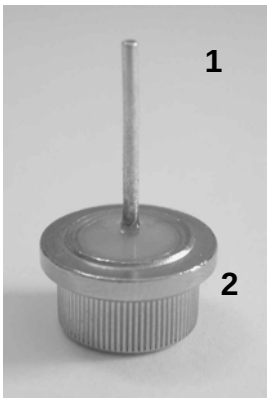
Features

- 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

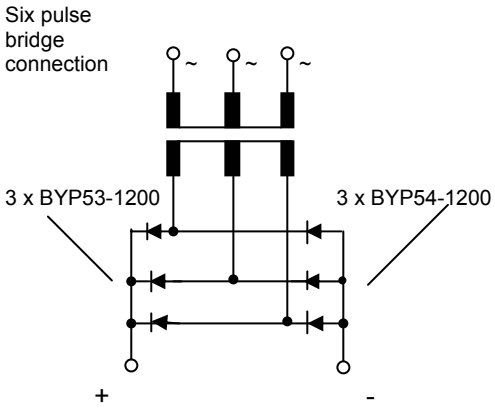
Pinout details



BYP53: 1 - cathode
2 - anode

BYP54: 1 - anode
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

422..... date code 422 = 2004 week 22
ZETEX
BYP53..... diode type
400..... repetitive peak reverse voltage V_{RRM} (in V) 400

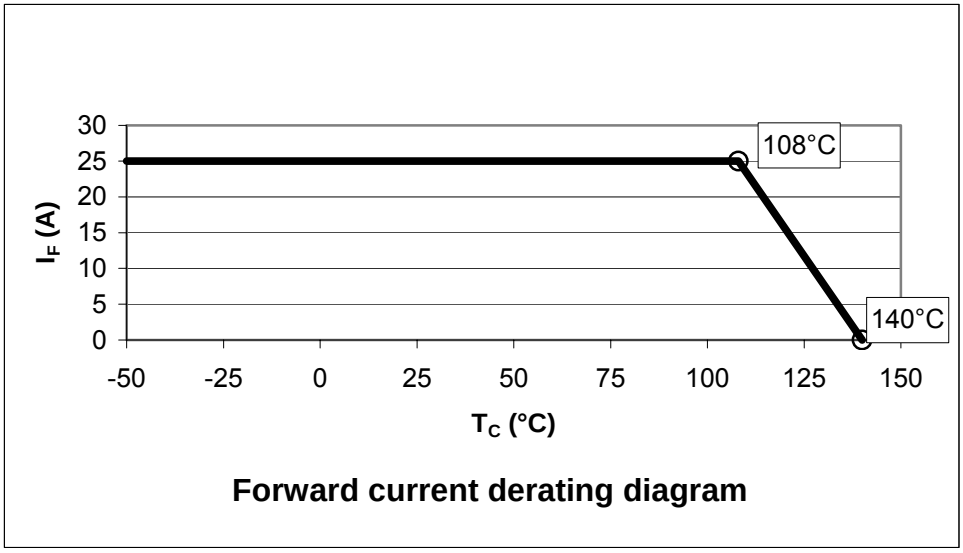
Absolute maximum ratings (at T_{amb} = 25°C unless otherwise stated)

Parameter			Symbol		Unit	Test condition
Repetitive peak reverse voltage	BYP53-75	BYP54-75	V_{RRM}	75	V	T_c = 140°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, ≤ 10 ms
				350		T_J = 175°C half-sine wave, ≤ 10 ms
Maximum rated value			∫i²dt	900	A²s	half-sine wave, ≤ 10 ms
				780		T_J = 175°C half-sine wave, ≤ 10 ms
Repetitive peak forward current			$I_{FRM}=\pi*I_{FAV}$	79	A	f = >15 Hz
Effective forward current			I_{FRMS}	45	A	
Junction temperature			T_{Jmax}	175	°C	
Storage temperature range			T_{stg}	- 50 to + 140	°C	

Thermal resistance

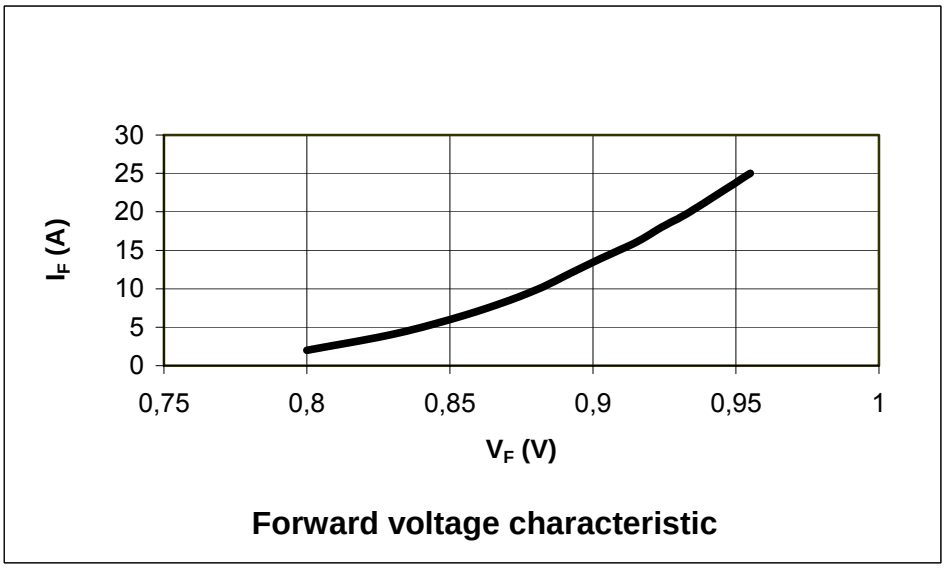
Parameter	Symbol	Value	Unit
Junction to case	$R_{\theta JC}$	1.2	°C/W

Thermal characteristics



Forward current derating diagram

Electrical characteristics (at T_{amb} = 25°C unless otherwise stated)



Forward voltage characteristic

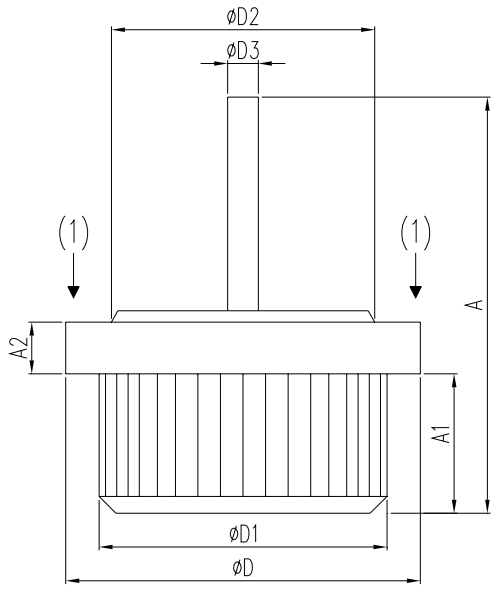
Electrical characteristics (at T_{amb} = 25°C unless otherwise stated)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Test contitions
Forward voltage	BYP53-75...800 BYP54-75...800	V_F	-	0.95	1.1	V	I_F = 25 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 A,
Reverse current	BYP53-75...150 BYP54-75...150	I_{RRM}	-	-	3	mA	T_J = 140°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°C
Slope resistance (information value)		r_F	-	5.75	-	mΩ	T_J = 175°C

Options: Electrical characteristics for parallel connecting
(at T_{amb} = 25°C unless otherwise stated)

Option	Parameter	Symbol	Min.	Typ.	Max.	Unit	Test contitions
1	Forward voltage difference in one category of forward voltage	ΔV_F	-	-	0.05	V	I_F = 25 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

Europe

Zetex GmbH
Streitfeldstraße 19
D-81673 München
Germany

Telefon: (49) 89 45 49 49 0
Fax: (49) 89 45 49 49 49
europe.sales@zetex.com

Americas

Zetex Inc
700 Veterans Memorial Highway
Hauppauge, NY 11788
USA

Telephone: (1) 631 360 2222
Fax: (1) 631 360 8222
usa.sales@zetex.com

Asia Pacific

Zetex (Asia Ltd)
3701-04 Metroplaza Tower 1
Hing Fong Road, Kwai Fong
Hong Kong

Telephone: (852) 26100 611
Fax: (852) 24250 494
asia.sales@zetex.com

Corporate Headquarters

Zetex Semiconductors plc
Zetex Technology Park, Chadderton
Oldham, OL9 9LL
United Kingdom

Telephone (44) 161 622 4444
Fax: (44) 161 622 4446
hq@zetex.com