

BYY57 / BYY58

35A Silicon Power Rectifier Diode

Description

The BYY57/58 are hermetically sealed 35A-diodes, which are available in different reverse voltage classes up to 1500V.

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 35A
- Reverse voltage 75V – 1500V
- 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

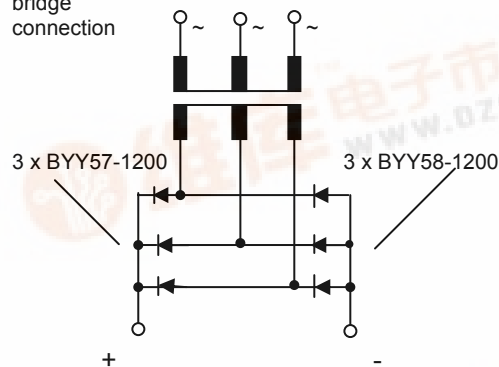


BYY57: 1 – cathode; 2 – anode

BYY58: 1 – anode; 2 – cathode

Typical application circuit

Six pulse bridge connection



Ordering information

Device	Quantity per box	Options
BYY57-75; ...; BYY57-1500	500	The package quantities for the different package modifications are included in "PressFitPackageModifications.pdf"
BYY58-75; ...; BYY58-1500	500	

Device marking

Devices are identified by type. Colour of marking: BYY57- black, BYY58 – red

422.....	date code 422 = 2004 week 22
ZETEX	
BYY57	diode type
400.....	repetitive peak reverse voltage V_{RRM} (in V) 400

BYY57 / BYY58

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

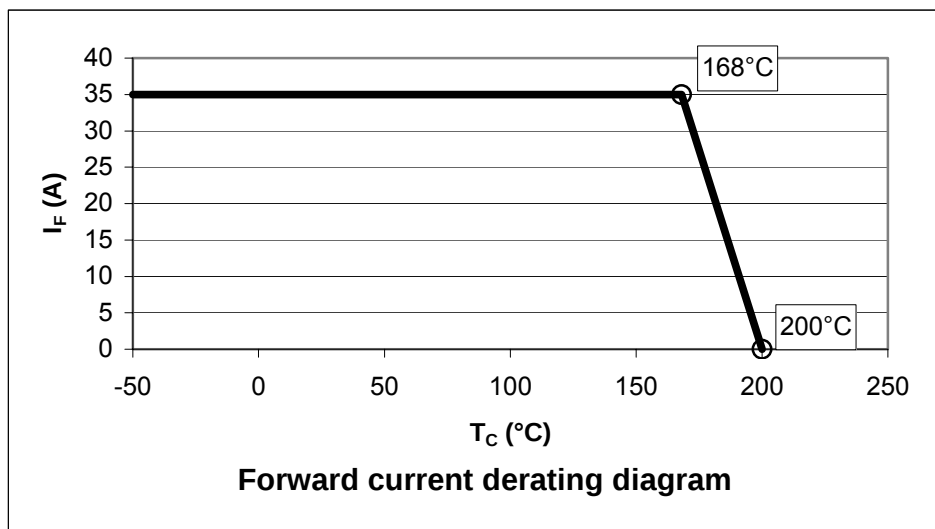
Parameter			Symbol		Unit	Test condition
Repetitive peak reverse voltage	BYY57-75	BYY58-75	V_{RRM}	75	V	$T_c = 150^{\circ}\text{C}$
	BYY57-100	BYY58-100		100		
	BYY57-150	BYY58-150		150		
	BYY57-200	BYY58-200		200		
	BYY57-300	BYY58-300		300		
	BYY57-400	BYY58-400		400		
	BYY57-500	BYY58-500		500		
	BYY57-600	BYY58-600		600		
	BYY57-700	BYY58-700		700		
	BYY57-800	BYY58-800		800		
	BYY57-900	BYY58-900		900		
	BYY57-1000	BYY58-1000		1000		
	BYY57-1100	BYY58-1100		1100		
	BYY57-1200	BYY58-1200		1200		
	BYY57-1300	BYY58-1300		1300		
	BYY57-1400	BYY58-1400		1400		
	BYY57-1500	BYY58-1500		1500		
Forward current, arithmetic value			I_{FAV}	35	A	
Surge forward current			I_{FSM}	600	A	half-sine wave, ≤ 10 ms
				500		$T_J = 175^{\circ}\text{C}$ half-sine wave, ≤ 10 ms
Maximum rated value			$\int i^2 dt$	1800	A^2s	half-sine wave, ≤ 10 ms
				1250		$T_J = 175^{\circ}\text{C}$ half-sine wave, ≤ 10 ms
Repetitive peak forward current			$I_{FRM} = \pi \cdot I_{FAV}$	110	A	$f = >15$ Hz
Effective forward current			I_{FRMS}	55	A	
Junction temperature			T_{Jmax}	200	$^{\circ}\text{C}$	
Storage temperature range			T_{stg}	- 50 to + 175	$^{\circ}\text{C}$	

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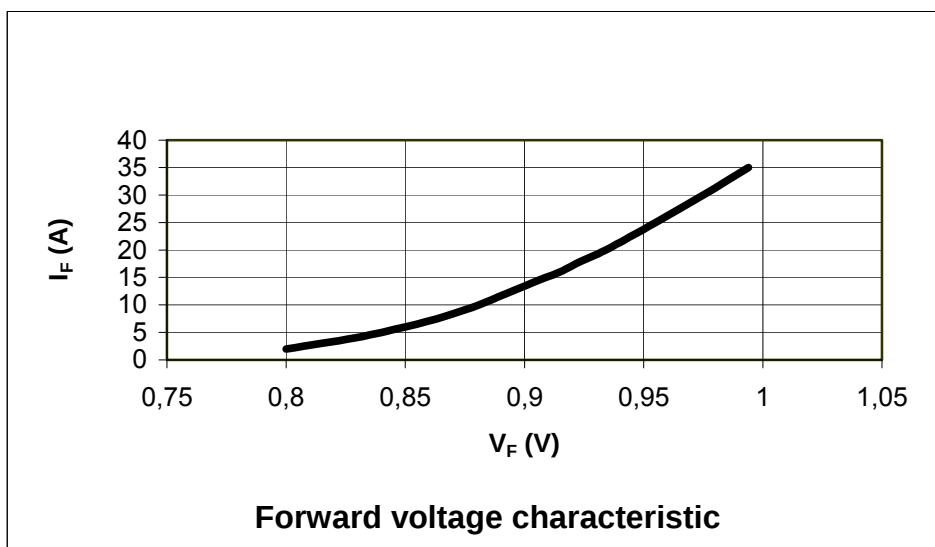
Thermal resistance

Parameter	Symbol	Value	Unit
Junction to case	$R_{\theta JC}$	1.0	$^{\circ}\text{C/W}$

Thermal characteristics



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



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

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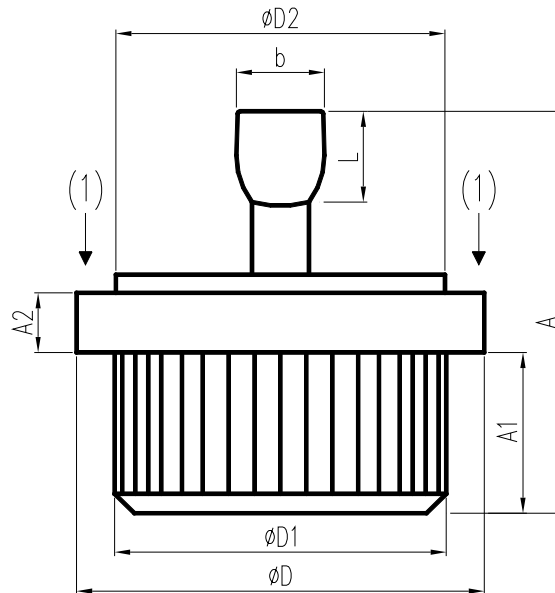
Parameter		Symbol	Min.	Typ.	Max.	Unit	Test conditions
Forward voltage	BYY57-75...1200	V_F	-	1.0	1.1	V	$I_F = 35$ A, measuring time 10ms (half-sine wave)
	BYY58-75...1200		-	1.03	1.15		
	BYY57-1300...1500		-	1.03	1.15		
	BYY58-1300...1500		-	1.03	1.15		
Forward voltage (information values)	BYY57-75...1200	V_F	-	0.82	-	V	$I_F = 20$ A, measuring time 10ms (half-sine wave), $T_J = 150^\circ\text{C}$
	BYY58-75...1200		-	0.82	-		
	BYY57-1300...1500	V_F	-	0.85	-	V	$I_F = 50$ A
	BYY58-1300...1500		-	0.85	-		
	BYY57-75...1200	V_F	-	-	1.2	V	$I_F = 50$ A
	BYY58-75...1200		-	-	1.2		
	BYY57-1300...1500	V_F	-	-	1.25	V	$I_F = 50$ A
	BYY58-1300...1500		-	-	1.25		
Reverse current	BYY57-75...150	I_{RRM}	-	-	3	mA	$T_J = 150^\circ\text{C}$, at V_{RRM}
	BYY58-75...150		-	-	3		
	BYY57-200...1500		-	-	1.5		
	BYY58-200...1500		-	-	1.5		
	BYY57-75...400	I_{RRM}	-	-	0.25	mA	at V_{RRM}
	BYY58-75...400		-	-	0.25		
	BYY57-500...1500		-	-	0.1		
	BYY58-500...1500		-	-	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	$I_F = 35$ A, measuring time 10ms (half-sine wave)
2	Reverse current in one category of forward voltage (only for BYY57-300...1500 and BYY58-300...1500)	I_R	-	-	0.01	mA	at V_{RRM}

Packaging details

BYY57 / BYY58



(1): touch area for press-in force

Package dimensions

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

DIM	Millimeters			Inches		
	MIN	TYP	MAX	MIN	TYP	MAX
A	15,00	15,50	16,00	0,591	0,610	0,630
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
b	3,10	3,40	3,70	0,122	0,134	0,146
D	15,50	15,70	15,90	0,610	0,618	0,626
D1	12,75	12,80	12,85	0,502	0,504	0,506
D2	12,30	12,50	12,70	0,484	0,492	0,500
L	3,00	3,50	4,00	0,118	0,138	0,157

Europe	Americas	Asia Pacific	Corporate Headquarters
Zetex GmbH Streitfeldstraße 19 D-81673 München Germany	Zetex Inc 700 Veterans Memorial Highway Hauppauge, NY 11788 USA	Zetex (Asia Ltd) 3701-04 Metroplaza Tower 1 Hing Fong Road, Kwai Fong Hong Kong	Zetex Semiconductors plc Zetex Technology Park, Chadderton Oldham, OL9 9LL United Kingdom
Telefon: (49) 89 45 49 49 0 Fax: (49) 89 45 49 49 49 europe.sales@zetex.com	Telephone: (1) 631 360 2222 Fax: (1) 631 360 8222 usa.sales@zetex.com	Telephone: (852) 26100 611 Fax: (852) 24250 494 asia.sales@zetex.com	Telephone (44) 161 622 4444 Fax: (44) 161 622 4446 hq@zetex.com

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