

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

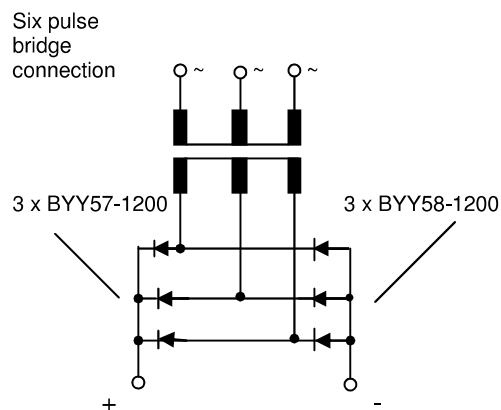
Pinout details



BYY57: 1 – cathode; 2 - anode

BYY58: 1 – anode; 2 - cathode

Typical application circuit



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

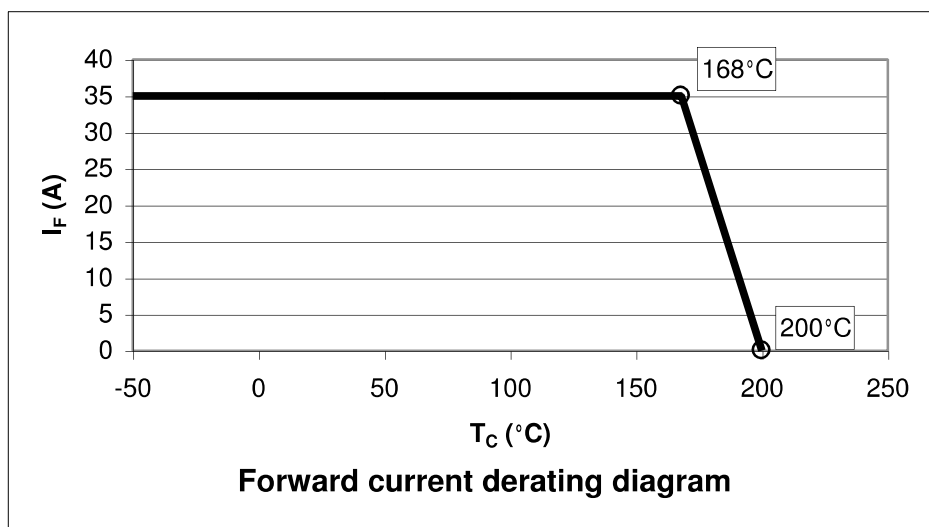
Absolute maximum ratings (at $T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated)

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, $\leq 10\text{ ms}$
				500		$T_J = 175^{\circ}\text{C}$ half-sine wave, $\leq 10\text{ ms}$
Maximum rated value			$\int i^2 dt$	1800	A^2s	half-sine wave, $\leq 10\text{ ms}$
				1250		$T_J = 175^{\circ}\text{C}$ half-sine wave, $\leq 10\text{ ms}$
Repetitive peak forward current			$I_{FRM} = \pi \cdot I_{FAV}$	110	A	$f = >15\text{ Hz}$
Effective forward current			I_{FRMS}	55	A	
Junction temperature			T_{Jmax}	200	$^{\circ}\text{C}$	
Storage temperature range			T_{stg}	- 50 to + 175	$^{\circ}\text{C}$	

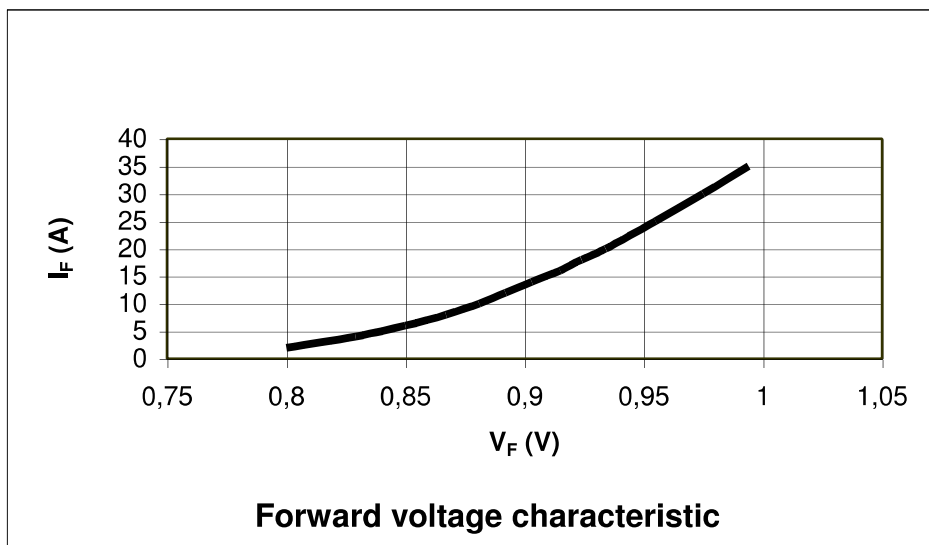
Thermal resistance

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)



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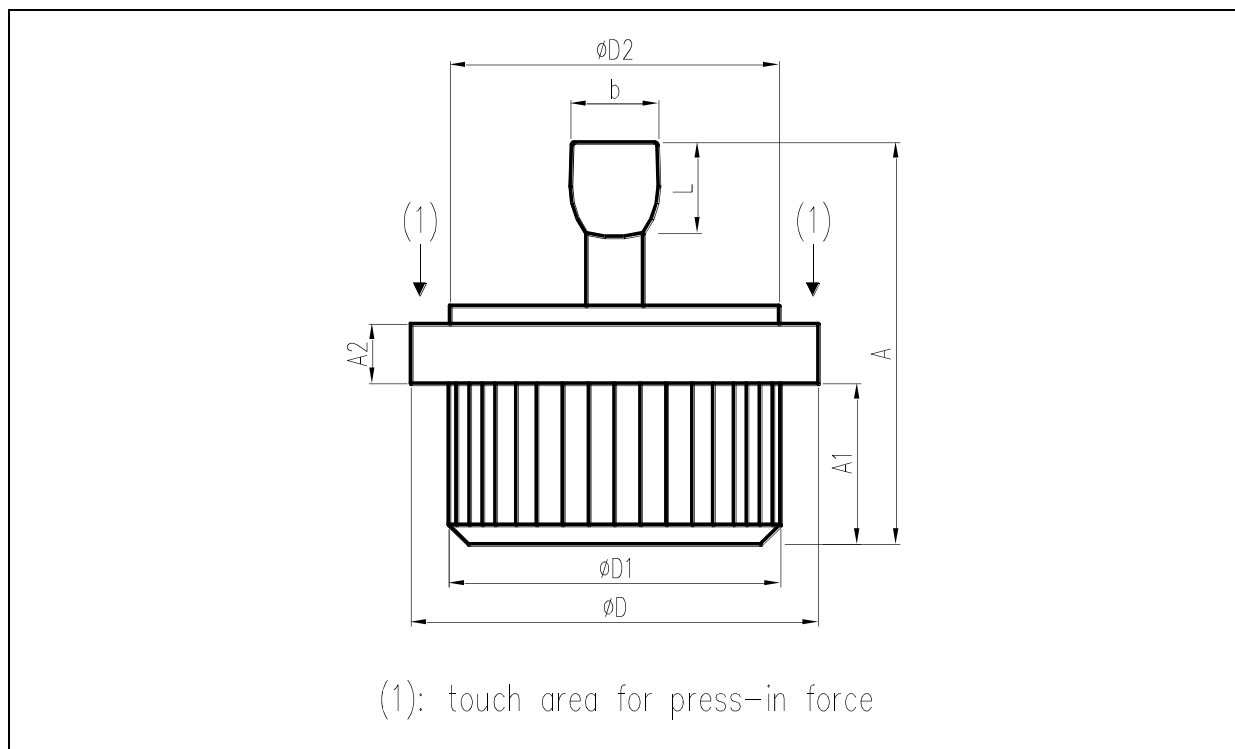
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Forward voltage	BYY57-75...1200 BYY58-75...1200	-	1.0	1.1	V	$I_F = 35\text{ A}$, measuring time 10ms (half-sine wave)
	BYY57-1300...1500 BYY58-1300...1500	-	1.03	1.15		
Forward voltage (information values)	BYY57-75...1200 BYY58-75...1200	-	0.82	-	V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



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