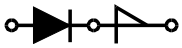
Breakover Diode Modules

Version: R  Version: RD 

V_{BO} V	Standard Types	BOD - Elements	V_{BO} V	Standard Types	BOD - Elements	V_{BO} V	Standard Types	BOD - Elements
1200 ±50	IXBOD 1 -12R(D)	2	2000 ±50	IXBOD 1 -20R(D)	3	3400 ±100	IXBOD 1 -34R	4
1300 ±50	IXBOD 1 -13R(D)	2	2100 ±50	IXBOD 1 -21R(D)	3	3600 ±100	IXBOD 1 -36R	4
1400 ±50	IXBOD 1 -14R(D)	2	2200 ±50	IXBOD 1 -22R(D)	3	3800 ±100	IXBOD 1 -38R	4
1500 ±50	IXBOD 1 -15R(D)	2	2300 ±50	IXBOD 1 -23R(D)	3	4000 ±100	IXBOD 1 -40R	4
1600 ±50	IXBOD 1 -16R(D)	2	2400 ±50	IXBOD 1 -24R(D)	3	4200 ±100	IXBOD 1 -42R	4
1700 ±50	IXBOD 1 -17R(D)	2	2500 ±50	IXBOD 1 -25R(D)	3			
1800 ±50	IXBOD 1 -18R(D)	2	2600 ±100	IXBOD 1 -26R(D)	3			
1900 ±50	IXBOD 1 -19R(D)	2	2800 ±100	IXBOD 1 -28R(D)	3			
			3000 ±100	IXBOD 1 -30R(D)	3			
			3200 ±100	IXBOD 1 -32R(D)	3			

Symbol	Test Conditions	2 BODs	3 BODs	4 BODs	2-3 BODs D-Version	
I_D	T_{VJ} = 125°C; V = 0,8x V_{BO}	100	100	100	100	µA
V_{BO}					$V_{BO}(T_{VJ}) = V_{BO,\ 25°C}\,[1 + K_T\,(T_{VJ} - 25°C)]$	
I_{RMS}	f = 50 HZ; T_{amb} = 50°C connection pins soldered to printed circuit (conductor 0,035x2mm)	2.0	1.4	1.1	0.3	A
I_{AVM}		1.25	0.9	0.7	0.2	A
I_{SM}	t_p = 0.1 ms; T_{amb} = 50°C non repetitive	200	200	200	50	A
I^2t	t_p = 0.1 ms; T_{amb} = 50°C	2	2	2	0.125	A^2s
V_T	T_{VJ} =125°C; I_T = 5A	3.4	5.1	6.8	27	V
$V_{(TO)}$	For power-loss calculations only	2.2	3.3	4.4	17.5	V
r_T	T_{VJ} =125°C	0.24	0.36	0.48	3	Ω
T_{amb}		-40...+125	-40...+125	-40...+125	-40...+125	°C
T_{stg}		-40...+125	-40...+125	-40...+125	-40...+125	°C
T_{VJm}		125	125	125	125	°C
K_T	Temperatur coefficient of V_{BO}	$2{\cdot}10^{-3}$	$2{\cdot}10^{-3}$	$2{\cdot}10^{-3}$	$2{\cdot}10^{-3}$	K^{-1}
K_P	coefficient for energy per pulse E_P (material constant)	700	700	700	700	K/Ws
R_{thJA}	- natural convection	20	20	20	20	K/W
	- with air speed 2 m/s	16	16	16	16	K/W
Weight	typical	14	14	14	14	g

Symbol	Test Conditions Characteristic Values <u>both</u> Versions R & RD	2 BODs	3 BODs	4 BODs	
I_{BO}	T_{VJ} = 25°C	15	15	15	mA
I_H	T_{VJ} = 25°C	30	30	30	mA
V_H	T_{VJ} = 25°C	4 - 8	4 - 8	4 - 8	V
$(dv/dt)_C$	T_{VJ} = 50°C; $V_D = 0.67{\cdot}(V_{BO} + 100V)$				
	- V_{BO} bis 1500V	> 1000	-	-	V/µs
	- V_{BO} 1600 - 2000V	> 1500	-	-	V/µs
	- V_{BO} 2100 - 2500V	-	> 2000	-	V/µs
	- V_{BO} 2600 - 3000V	-	> 2500	-	V/µs
	- V_{BO} 3200 - 3400V	-	-	> 3000	V/µs
	- V_{BO} 3600 - 4200V	-	-	> 3500	V/µs
$(di/dt)_C$	T_{VJ} = 125°C; $V_D = V_{BO}$; I_T = 80A; f = 50 Hz	200	200	200	A/µs
$t_{q(typ)}$	T_{VJ} = 125°C $V_D = 0.67{\cdot}V_{BO}$; V_R = 0V $dv/dt_{(lin.)}$ = 200V/µs; I_T = 80A; di/dt = -10A/µs	150	150	150	µs

IXYS reserve at these the right to change limits, test conditions and dimensions; Data according to IEC 60747

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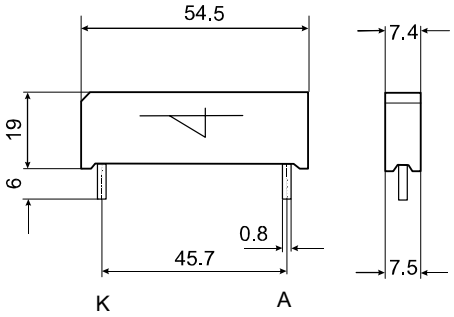

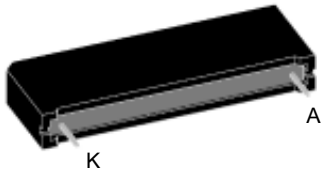

Dimensions in mm (1 mm = 0.0394")

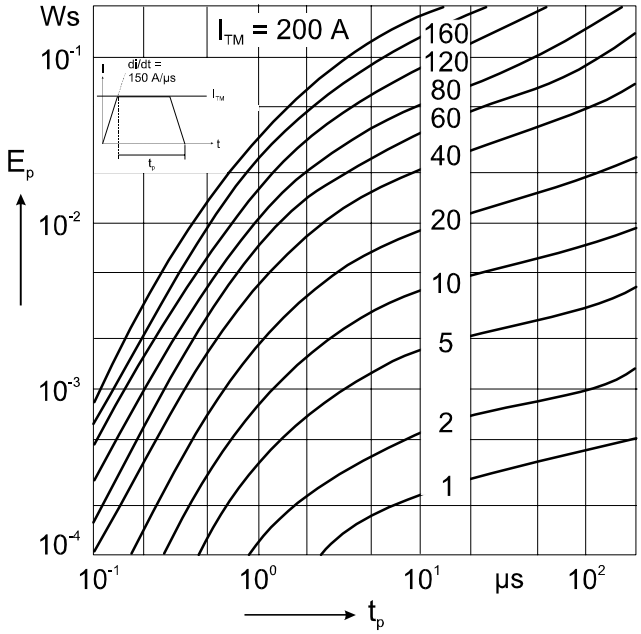

Fig. 5 Energy per pulse for single BOD element for trapezoidal wave current. E_P must be multiplied by number of elements for total energy.

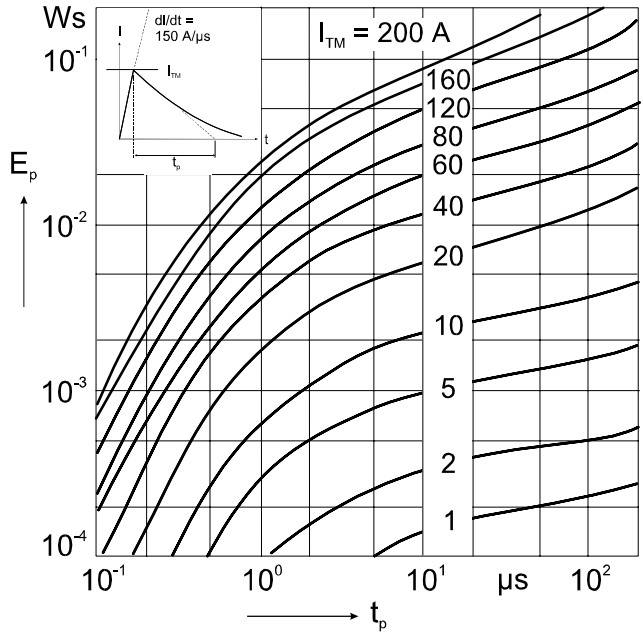

Fig. 6 Energy per pulse for single BOD element for exponentially decaying current pulse. E_P must be multiplied by number of elements for total energy.

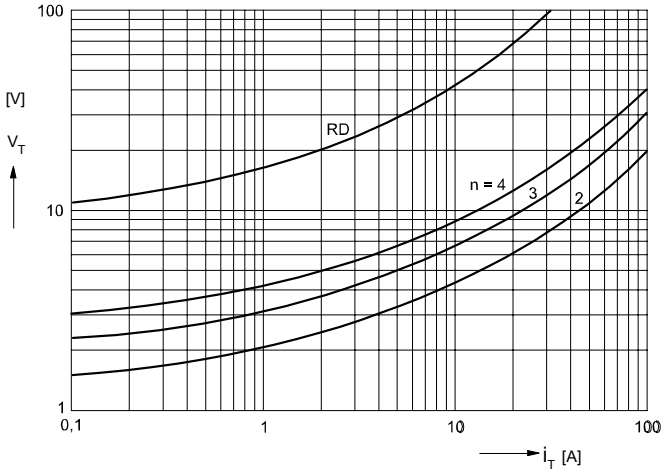

Fig. 7 On-state voltage at T_{VJ} = 125°C.

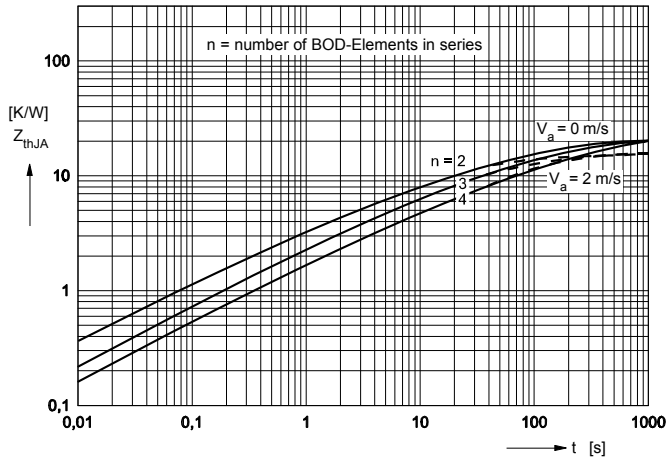

Fig. 8 Transient thermal resistance.