BTD107/16

Thyristor / Diode Modules

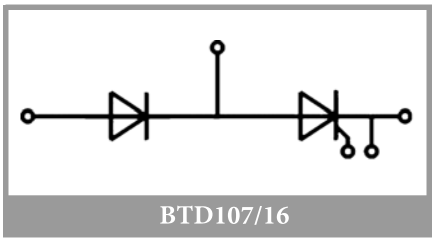
BTD107/16

Features*

- Heat transfer through aluminium oxide ceramic insulated metal baseplate
- UL recognized, file no. E63532

Typical Applications

- Rectifier for motor drives
- Process control
- Rectifier for power supplies



BTD107/16

Absolute Maximum Ratings				
Symbol	**Conditions**		**Values**	**Unit**
Chip				
$I_{T(AV)}$	sin. 180° T_j = 130 °C	T_c = 85 °C	119	A
		T_c = 100 °C	91	A
I_{TSM}	10 ms	T_j = 25 °C	2250	A
		T_j = 130 °C	1900	A
i^2t	10 ms	T_j = 25 °C	25313	A^2s
		T_j = 130 °C	18050	A^2s
V_{RSM}	T_j = 25 °C		1700	V
V_{RRM}	T_j = 25 °C		1600	V
V_{DRM}	T_j = 25 °C		1600	V
$(di/dt)_{cr}$	T_j = 130 °C		140	A/µs
$(dv/dt)_{cr}$	T_j = 130 °C		1000	V/µs
T_j			-40 ... 130	°C
Module				
T_{stg}			-40 ... 125	°C
V_{isol}	a.c.; 50 Hz; r.m.s.	1 min	3000	V
		1 s	3600	V

Characteristics						
Symbol	**Conditions**		**min.**	**typ.**	**max.**	**Unit**
Chip						
V_T	T_j = 25 °C, I_T = 300 A			1.6	1.75	V
$V_{T(TO)}$	T_j = 130 °C			0.8	0.90	V
r_T	T_j = 130 °C			2.80	3.35	mΩ
$I_{DD};I_{RD}$	T_j = 130 °C, $V_{DD} = V_{DRM}$; $V_{RD} = V_{RRM}$				20	mA
t_{gd}	T_j = 25 °C, I_G = 1 A, di_G/dt = 1 A/µs			1		µs
t_{gr}	$V_D = 0.67 * V_{DRM}$			2		µs
t_q	T_j = 130 °C			200		µs
I_H	T_j = 25 °C			150	250	mA
I_L	T_j = 25 °C, R_G = 33 Ω			300	600	mA
V_{GT}	T_j = 25 °C, d.c.		2.5			V
I_{GT}	T_j = 25 °C, d.c.		100			mA
V_{GD}	T_j = 130 °C, d.c.				0.25	V
I_{GD}	T_j = 130 °C, d.c.				4	mA
$R_{th(j-c)}$	continuous DC	per chip			0.15	K/W
		per module			0.075	K/W
$R_{th(j-c)}$	sin. 180°	per chip			0.2	K/W
		per module			0.1	K/W
$R_{th(j-c)}$	rec. 120°	per chip			0.21	K/W
		per module			0.105	K/W
Module						
$R_{th(c-s)}$	chip			0.09		K/W
	module			0.05		K/W
M_s	to heatsink M5		4.25		5.75	Nm
M_t	to terminals M5		2.55		3.45	Nm
a					5 * 9.81	m/s^2
w				75		g

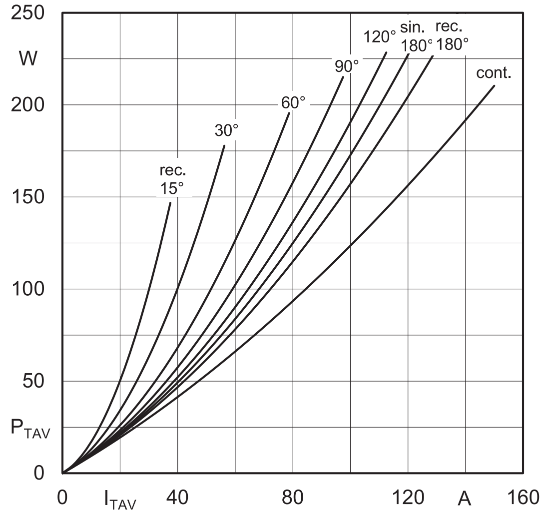


Fig. 1L: Power dissipation per thyristor/diode vs. on-state current

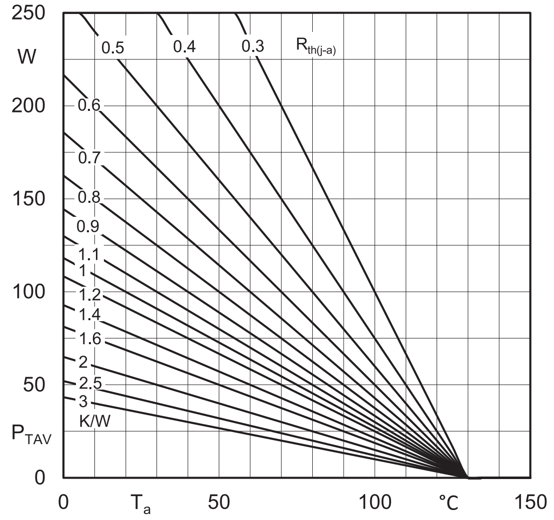


Fig. 1R: Max. power dissipation per chip vs. ambient temperature

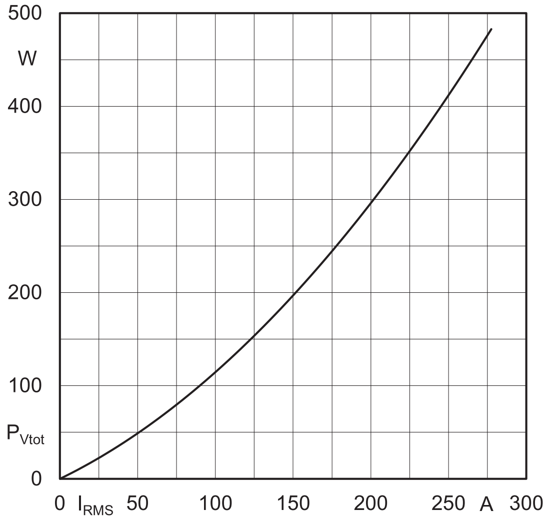


Fig. 2L: Max. power dissipation of one module vs. rms current

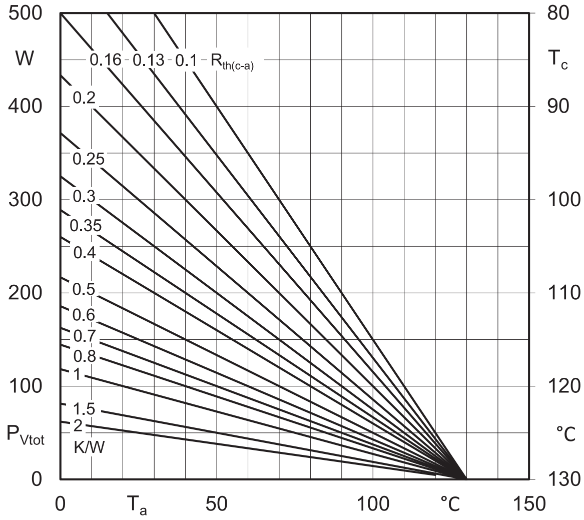


Fig. 2R: Max. power dissipation of one module vs. case temperature

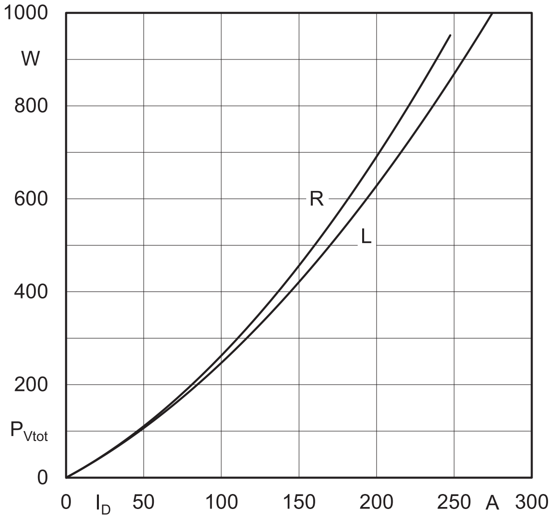


Fig. 3L: Max. power dissipation of two modules vs. direct current

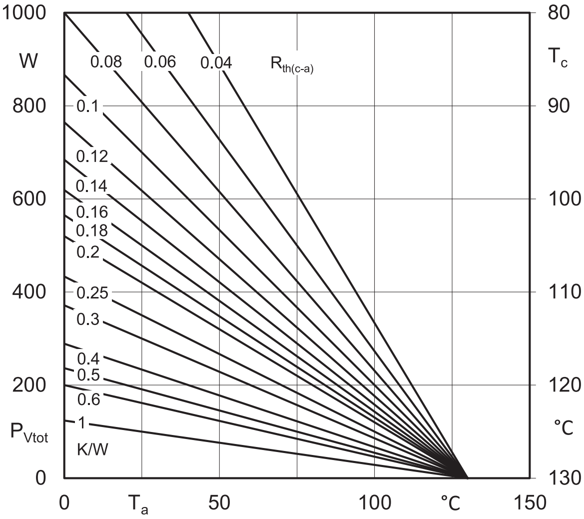


Fig. 3R: Max. power dissipation of two modules vs. case temperature

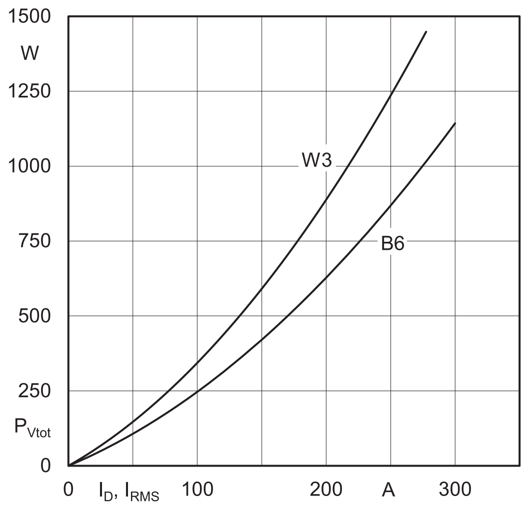


Fig. 4L: Max. power dissipation of three modules vs. direct current

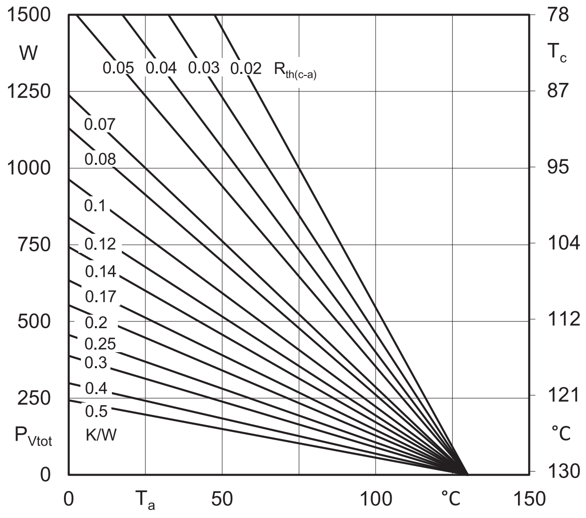


Fig. 4R: Max. power dissipation of three modules vs. case temperature

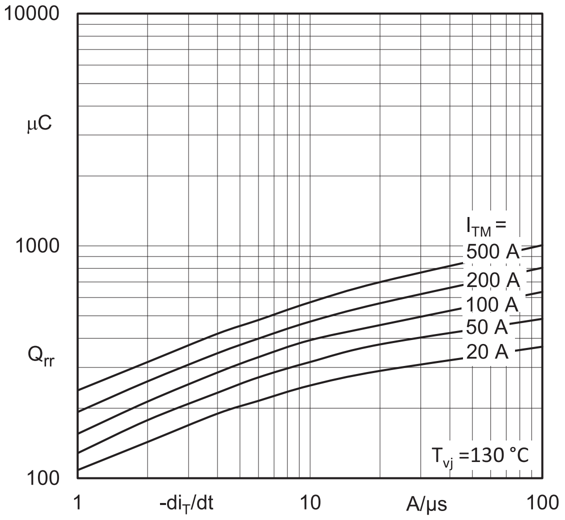


Fig. 5: Recovered charge vs. current decrease

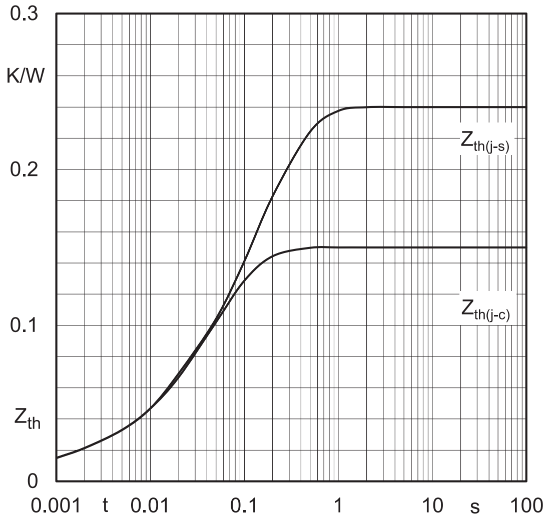


Fig. 6: Transient thermal impedance vs. time

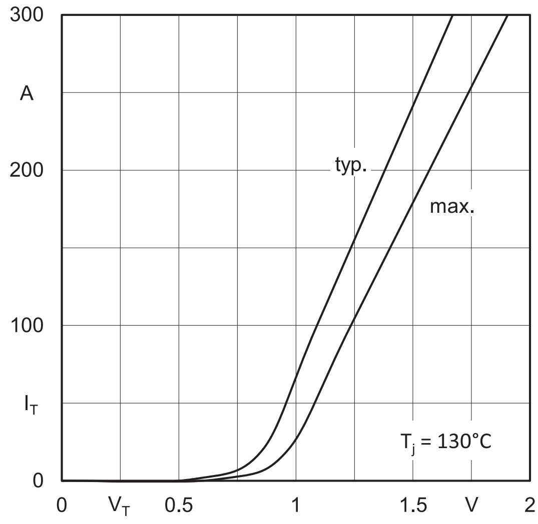


Fig. 7: On-state characteristics

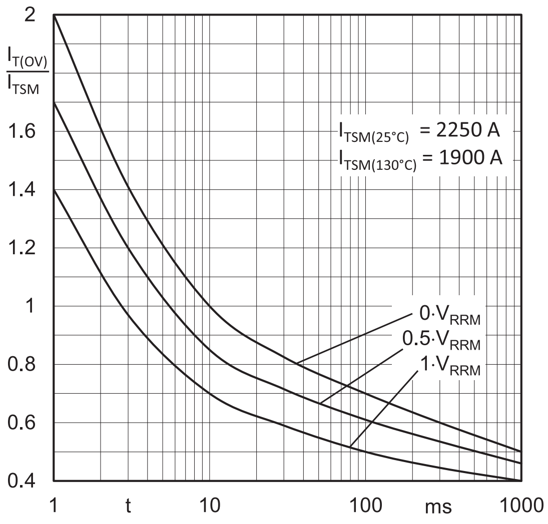


Fig. 8: Surge overload current vs. time

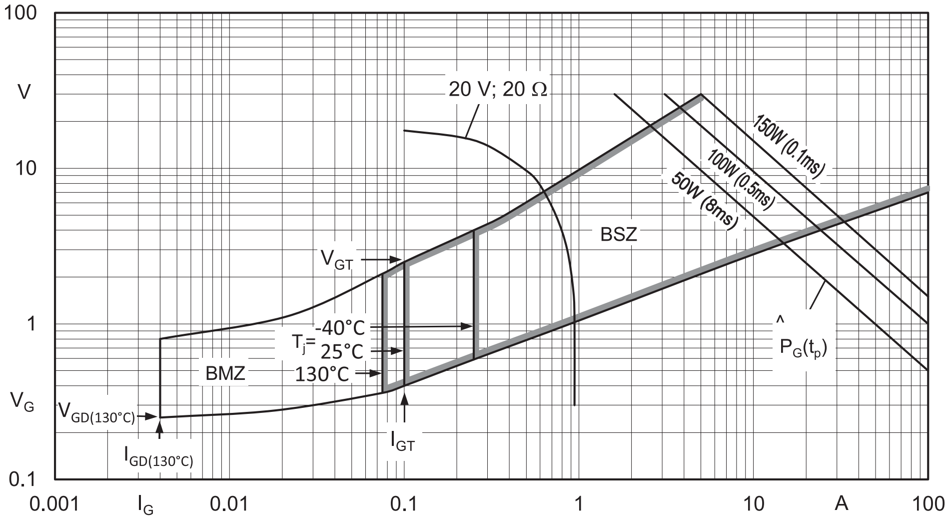
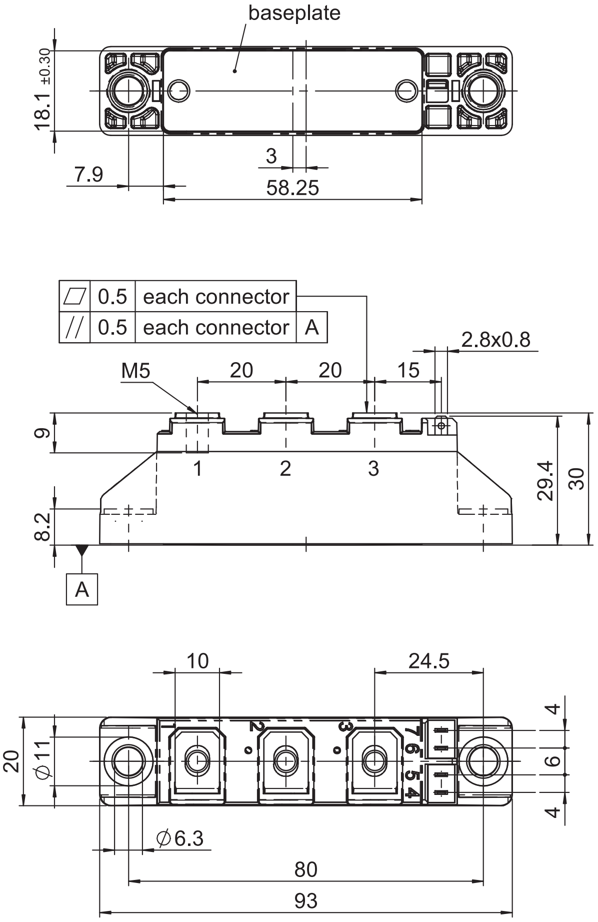
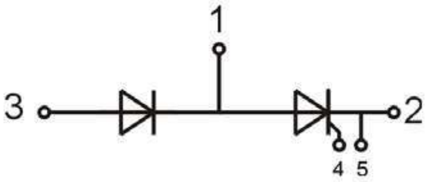


Fig. 9: Gate trigger characteristics



general tolerance ± 0.5mm



BTD107/16

This is an electrostatic discharge sensitive device (ESDS) due to international standard

***IMPORTANT INFORMATION AND WARNINGS**

The specifications of Biltek products may not be considered as guarantee or assurance of product characteristics ("Beschaffenheitsgarantie"). The specifications of BİLTEK products describe only the usual characteristics of products to be expected in