



Fast Thyristor Type TFI353-800-34

Low switching losses
Low reverse recovery charge
Distributed amplified gate for high di_T/dt

Maximum allowable mean on-state current		I_{TAV}	800 A
Repetitive peak off-state voltage		V_{DRM}	3000...3400 V
Repetitive peak reverse voltage		V_{RRM}	
Turn-off time		t_q	63.0 μs
V_{DRM}, V_{RRM}, V	3000	3200	3400
Voltage code	30	32	34
$T_{ij}, ^\circ C$	-60...+125		

MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	Values	Test conditions	
ON-STATE					
I_{TAV}	Maximum allowable mean on-state current	A	744 800 1099	$T_c=85\text{ }^{\circ}\text{C}$; Double side cooled; $T_c=80\text{ }^{\circ}\text{C}$; Double side cooled; $T_c=55\text{ }^{\circ}\text{C}$; Double side cooled; 180° half-sine wave; 50 Hz	
I_{TRMS}	RMS on-state current	A	1256	$T_c=80\text{ }^{\circ}\text{C}$; Double side cooled; 180° half-sine wave; 50 Hz	
I_{TSM}	Surge on-state current	kA	20.0 23.0	$T_j=T_{j\text{ max}}$ $T_j=25\text{ }^{\circ}\text{C}$	180° half-sine wave; $t_p=10\text{ ms}$; single pulse; $V_D=V_R=0\text{ V}$; Gate pulse: $I_G=I_{FGM}$; $V_G=20\text{ V}$; $t_{GP}=50\text{ }\mu\text{ s}$; $di_G/dt=1\text{ A}/\mu\text{ s}$
			21.0 24.0	$T_j=T_{j\text{ max}}$ $T_j=25\text{ }^{\circ}\text{C}$	180° half-sine wave; $t_p=8.3\text{ ms}$; single pulse; $V_D=V_R=0\text{ V}$; Gate pulse: $I_G=I_{FGM}$; $V_G=20\text{ V}$; $t_{GP}=50\text{ }\mu\text{ s}$; $di_G/dt=1\text{ A}/\mu\text{ s}$
I^2t	Safety factor	$A^2s\cdot10^3$	2000 2600	$T_j=T_{j\text{ max}}$ $T_j=25\text{ }^{\circ}\text{C}$	180° half-sine wave; $t_p=10\text{ ms}$; single pulse; $V_D=V_R=0\text{ V}$; Gate pulse: $I_G=I_{FGM}$; $V_G=20\text{ V}$; $t_{GP}=50\text{ }\mu\text{ s}$; $di_G/dt=1\text{ A}/\mu\text{ s}$
			1800 2300	$T_j=T_{j\text{ max}}$ $T_j=25\text{ }^{\circ}\text{C}$	180° half-sine wave; $t_p=8.3\text{ ms}$; single pulse; $V_D=V_R=0\text{ V}$; Gate pulse: $I_G=I_{FGM}$; $V_G=20\text{ V}$; $t_{GP}=50\text{ }\mu\text{ s}$; $di_G/dt=1\text{ A}/\mu\text{ s}$
BLOCKING					
V_{DRM}, V_{RRM}	Repetitive peak off-state and Repetitive peak reverse voltages	V	3000...3400	$T_{j\text{ min}} < T_j < T_{j\text{ max}}$; 180° half-sine wave; 50 Hz; Gate open	
V_{DSM}, V_{RSM}	Non-repetitive peak off-state and Non-repetitive peak reverse voltages	V	3100...3500	$T_{j\text{ min}} < T_j < T_{j\text{ max}}$; 180° half-sine wave; single pulse; Gate open	
V_D, V_R	Direct off-state and Direct reverse voltages	V	$0.6\cdot V_{DRM}$ $0.6\cdot V_{RRM}$	$T_j=T_{j\text{ max}}$; Gate open	

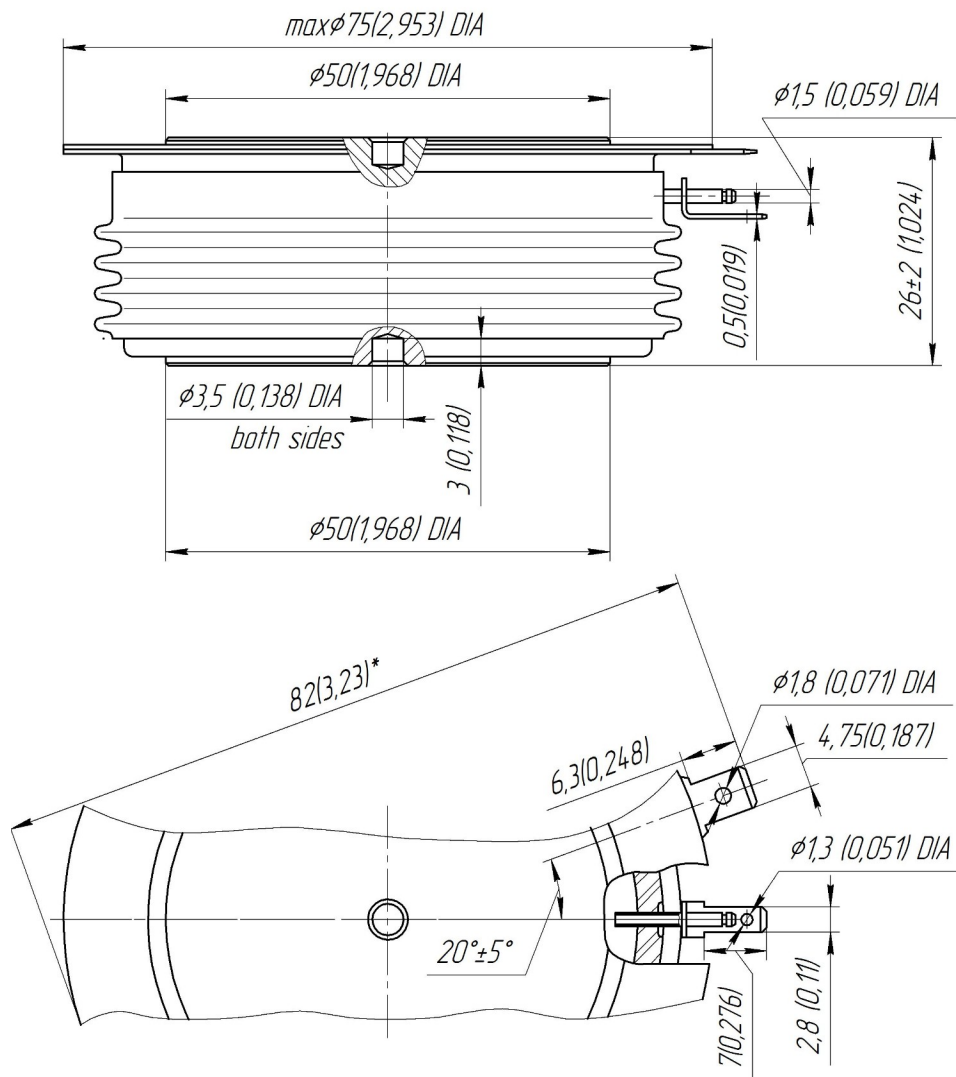
TRIGGERING				
I_FGM	Peak forward gate current	A	8	T _j =T _{j max}
V_RGM	Peak reverse gate voltage	V	5	
P_G	Gate power dissipation	W	8	T _j =T _{j max} for DC gate current
SWITCHING				
(di _T /dt) _{crit}	Critical rate of rise of on-state current non-repetitive (f=1 Hz)	A/μs	2000	T _j =T _{j max} ; V _D =0.67·V _{DRM} ; I _{TM} =4000 A; Gate pulse: I _G =2 A; V _G =20 V; t _{GP} =50 μs; di _G /dt=2 A/μs
THERMAL				
T _{stg}	Storage temperature	°C	−60...+50	
T _j	Operating junction temperature	°C	−60...+125	
MECHANICAL				
F	Mounting force	kN	24.0...28.0	
a	Acceleration	m/s ²	50	Device clamped

CHARACTERISTICS

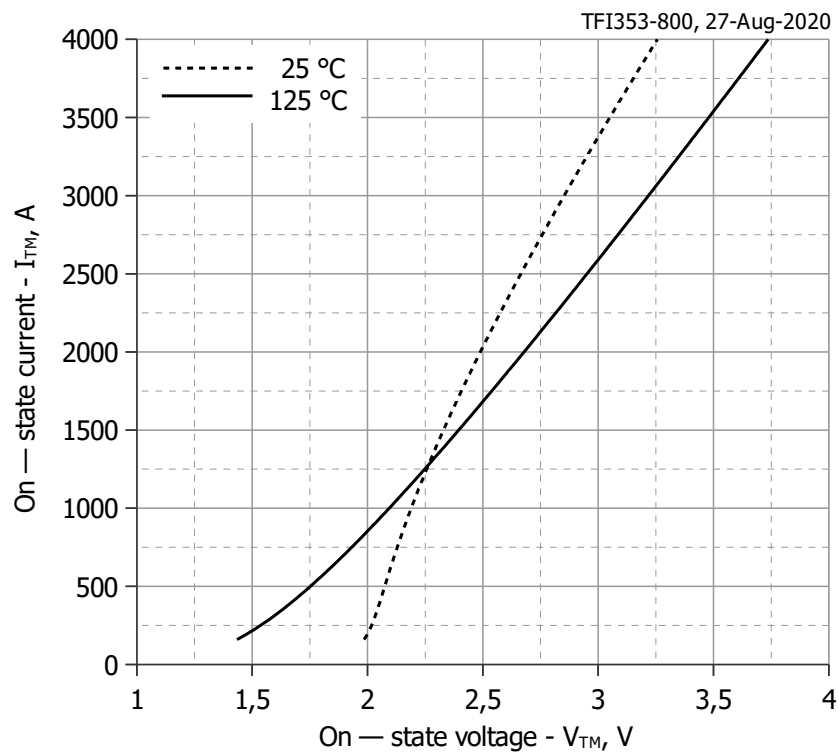
Symbols and parameters		Units	Values	Conditions	
ON-STATE					
V _{TM}	Peak on-state voltage, max	V	2.70	T _j =25 °C; I _{TM} =2512 A	
V _{T(TO)}	On-state threshold voltage, max	V	1.563	T _j =T _{j max} ;	
r _T	On-state slope resistance, max	mΩ	0.545	0.5 π I _{TAV} < I _T < 1.5 π I _{TAV}	
I _H	Holding current, max	mA	500	T _j =25 °C; V _D =12 V; Gate open	
BLOCKING					
I _{DRM} , I _{RRM}	Repetitive peak off-state and Repetitive peak reverse currents, max	mA	150	T _j =T _{j max} ; V _D =V _{DRM} ; V _R =V _{RRM}	
(dv _D /dt) _{crit}	Critical rate of rise of off-state voltage ¹⁾ , min	V/μs	200, 320, 500, 1000, 1600, 2000, 2500	T _j =T _{j max} ; V _D =0.67·V _{DRM} ; Gate open	
TRIGGERING					
V _{GT}	Gate trigger direct voltage, max	V	3.00 2.50 1.50	T _j = T _{j min} T _j =25 °C T _j = T _{j max}	V _D =12 V; I _D =3 A; Direct gate current
I _{GT}	Gate trigger direct current, max	mA	500 300 150	T _j = T _{j min} T _j = 25 °C T _j = T _{j max}	
V _{GD}	Gate non-trigger direct voltage, min	V	0.35	T _j =T _{j max} ; V _D =0.67·V _{DRM} ;	
I _{GD}	Gate non-trigger direct current, min	mA	60.00	Direct gate current	
SWITCHING					
t _{gd}	Delay time, max	μs	0.95	T _j =25 °C; V _D =1500 V; I _{TM} =I _{TAV} ; di/dt=200 A/μs;	
t _{gt}	Turn-on time ²⁾ , max	μs	2.00, 2.50, 3.20, 4.00	Gate pulse: I _G =2 A; V _G =20 V; t _{GP} =50 μs; di _G /dt=2 A/μs	
t _q	Turn-off time ³⁾ , max	μs	63.0	dv _D /dt=50 V/μs;	T _j =T _{j max} ; I _{TM} = I _{TAV} ; di _R /dt=-10 A/μs; V _R =100V; V _D =0.67 V _{DRM}
			80.0	dv _D /dt=200 V/μs;	
Q _{rr}	Recovered charge, max	μC	1000	T _j =T _{j max} ; I _{TM} =I _{TAV} ;	
t _{rr}	Reverse recovery time, max	μs	8.0	di _R /dt=-50 A/μs;	
I _{rr}	Reverse recovery current, max	A	260	V _R =100 V	

THERMAL					
R _{thjc}	Thermal resistance, junction to case, max	°C/W	0.0210	Direct current	Double side cooled
R _{thjc-A}			0.0462		Anode side cooled
R _{thjc-K}			0.0378		Cathode side cooled
R _{thck}	Thermal resistance, case to heatsink, max	°C/W	0.0040	Direct current	
MECHANICAL					
m	Weight, max	g	490		
D _s	Surface creepage distance	mm (inch)	30.38 (1.196)		
D _a	Air strike distance	mm (inch)	18.05 (0.710)		

PART NUMBERING GUIDE								NOTES																							
TFI	353	800	34	A2	C3	H4	N	1) Critical rate of rise of off-state voltage																							
1	2	3	4	5	6	7	8	<table><tr><td>Symbol of Group</td><td>P2</td><td>K2</td><td>E2</td><td>A2</td><td>T1</td><td>P1</td><td>M1</td></tr><tr><td>(dv₀/dt)_{crit}, V/μs</td><td>200</td><td>320</td><td>500</td><td>1000</td><td>1600</td><td>2000</td><td>2500</td></tr></table>								Symbol of Group	P2	K2	E2	A2	T1	P1	M1	(dv ₀ /dt) _{crit} , V/μs	200	320	500	1000	1600	2000	2500
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(dv ₀ /dt) _{crit} , V/μs	200	320	500	1000	1600	2000	2500																								
1. TFI — fast inverter thyristor								2) Turn-on time																							
2. Design version								<table><tr><td>Symbol of group</td><td>P4</td><td>M4</td><td>K4</td><td>H4</td></tr><tr><td>t_{gr}, μs</td><td>2.00</td><td>2.50</td><td>3.20</td><td>4.00</td></tr></table>								Symbol of group	P4	M4	K4	H4	t _{gr} , μs	2.00	2.50	3.20	4.00						
Symbol of group	P4	M4	K4	H4																											
t _{gr} , μs	2.00	2.50	3.20	4.00																											
3. Mean on-state current, A								3) Turn-off time (dv ₀ /dt=50 V/μs)																							
4. Voltage code								<table><tr><td>Symbol of group</td><td>C3</td></tr><tr><td>t_{gr}, μs</td><td>63.0</td></tr></table>								Symbol of group	C3	t _{gr} , μs	63.0												
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t _{gr} , μs	63.0																														
5. Critical rate of rise of off-state voltage																															
6. Group of turn-off time (dv ₀ /dt=50 V/μs)																															
7. Group of turn-on time																															
8. Ambient conditions: N – normal; T – tropical																															



All dimensions in millimeters (inches)

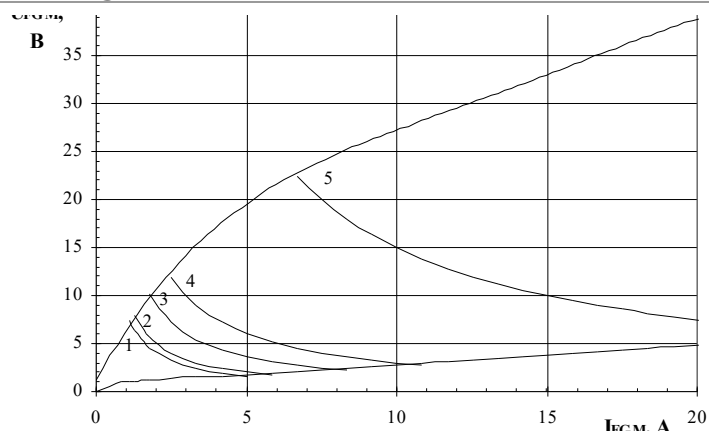


Analytical function for On-state characteristic:

$$V_T = A + B \cdot i_T + C \cdot \ln(i_T + 1) + D \cdot \sqrt{i_T}$$

	Coefficients for max curves	
	$T_j = 25^\circ\text{C}$	$T_j = T_{j\text{max}}$
A	1.19677796	0.78075192
B	0.00070481	0.00044454
C	0.24174501	0.10128480
D	-0.04371044	0.00534467

Fig. 1 On-state characteristics of Limit device



Maximum peak gate power loss

Position	On-Off time ratio	Gate pulse length, ms	Gate Pulse Power, W
1	1	DC	8
2	2	10	10
3	20	1	18
4	40	0.5	30
5	200	0.1	150

Fig. 2 Gate characteristics

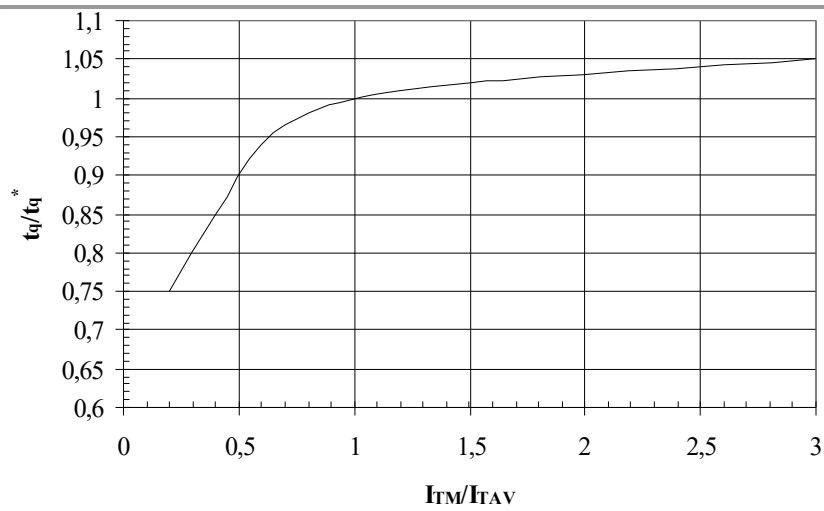


Fig. 3 Turn-off time t_q vs. On-state peak current I_{TM}

Conditions: $T_j = T_{j\ max}$; $di_R/dt = 10\ A/\mu s$; $V_R = 100\ V$; $dv_D/dt = 50\ V/\mu s$; $V_D = 0.67 \cdot V_{DRM}$

Typical changes of t_q are normalized to the t_q^* (t_q^* – see data sheet, $dv_D/dt = 50\ V/\mu s$)

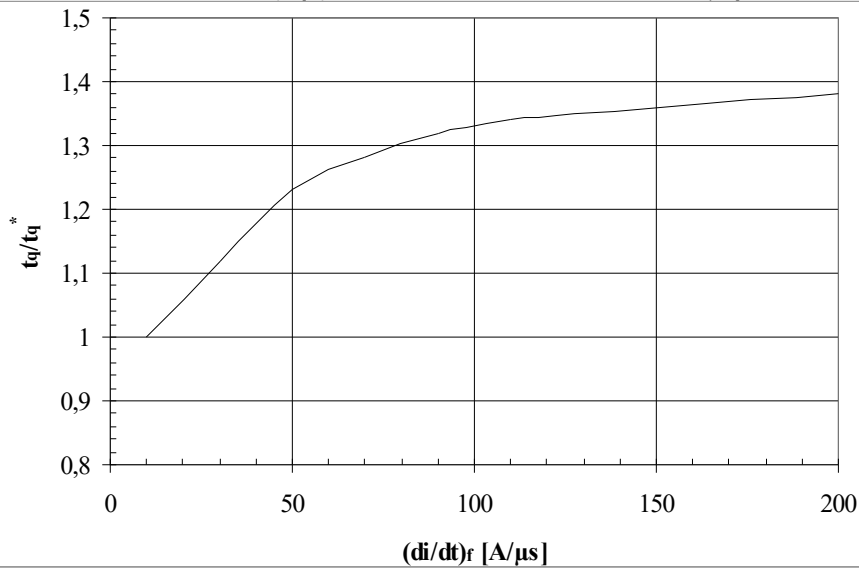


Fig. 4 Turn-off time t_q vs. Rate of fall of on-state current di_R/dt

Conditions: $T_j = T_{j\ max}$; $I_{TM} = I_{TAV}$; $V_R = 100\ V$; $dv_D/dt = 50\ V/\mu s$; $V_D = 0.67 \cdot V_{DRM}$

Typical changes of t_q are normalized to the t_q^* (t_q^* – see data sheet, $dv_D/dt = 50\ V/\mu s$)

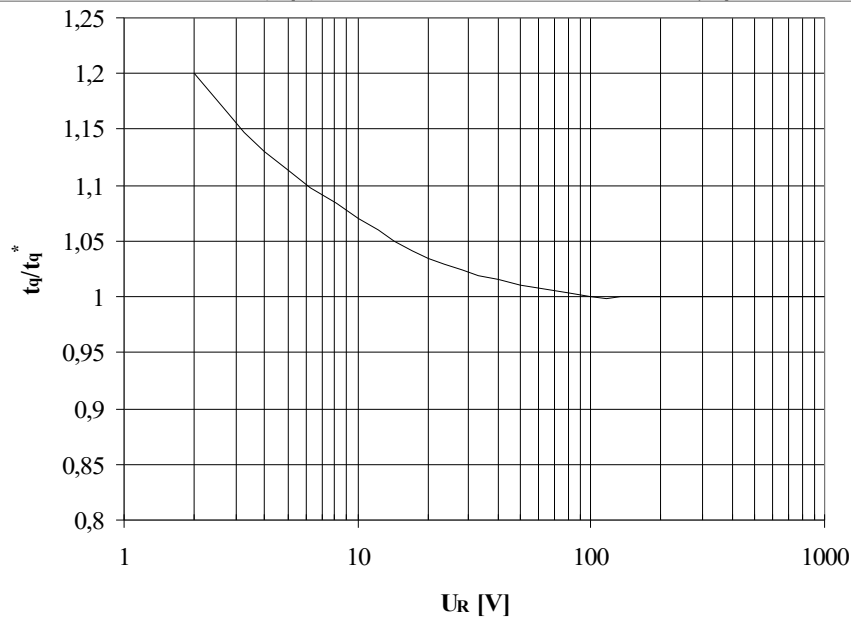


Fig. 5 Turn-off time t_q vs. Reverse voltage V_R

Conditions: $T_j = T_{j\ max}$; $I_{TM} = I_{TAV}$; $di_R/dt = 10\ A/\mu s$; $dv_D/dt = 50\ V/\mu s$; $V_D = 0.67 \cdot V_{DRM}$

Typical changes of t_q are normalized to the t_q^* (t_q^* – see data sheet, $dv_D/dt = 50\ V/\mu s$)

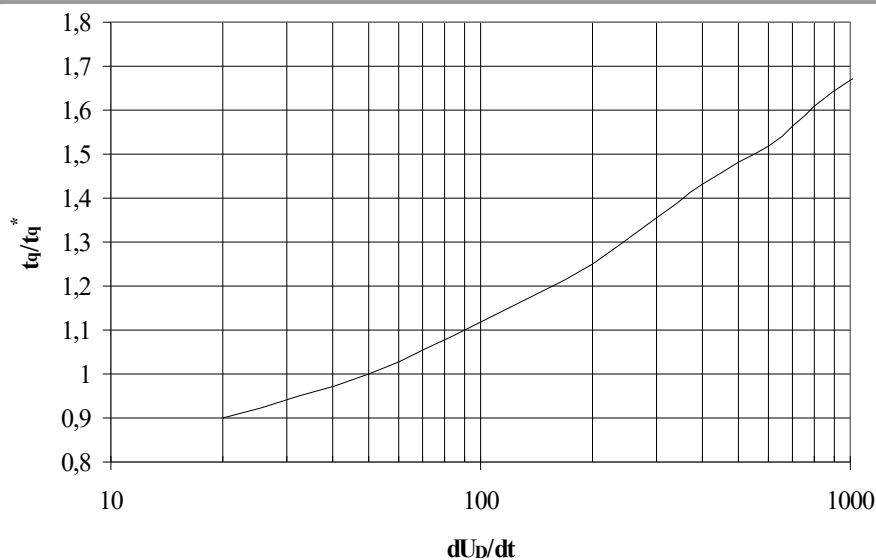


Fig. 6 Turn-off time t_q vs. Rate of rise of commutating voltage dv_D/dt

Conditions: $T_j = T_{j \max}$; $I_{TM} = I_{TAV}$; $di_R/dt = 10 \text{ A}/\mu\text{s}$; $V_R = 100 \text{ V}$; $V_D = 0.67 \cdot V_{DRM}$

Typical changes of t_q are normalized to the t_q^* (t_q^* – see data sheet, $dv_D/dt = 50 \text{ V}/\mu\text{s}$)

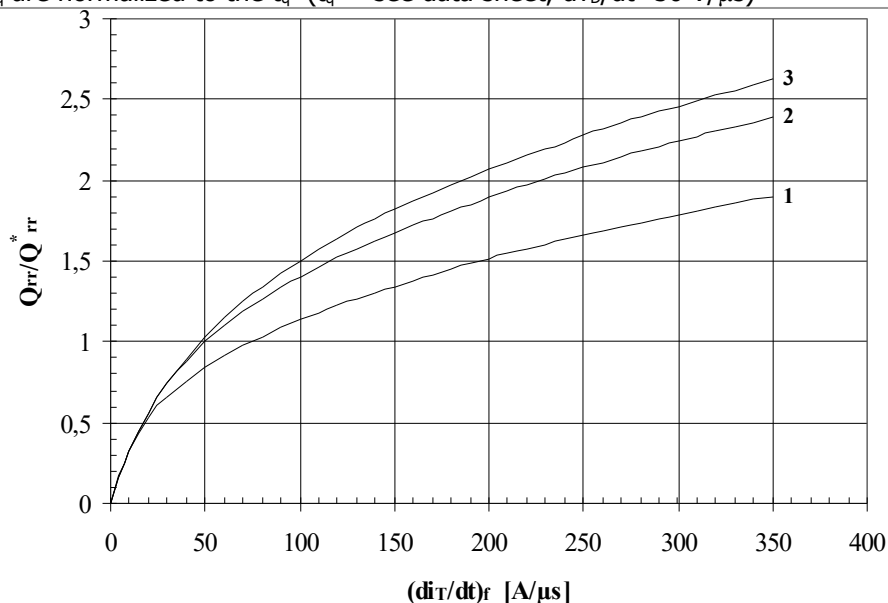


Fig. 7 Reverse recovery charge Q_{rr} vs. Rate of fall of on-state current di_R/dt

1 – $I_{TM} = 0.5 \cdot I_{TAV}$

2 – $I_{TM} = I_{TAV}$

3 – $I_{TM} = 1.5 \cdot I_{TAV}$

Conditions: $T_j = T_{j \max}$; $V_R = 100 \text{ V}$

Typical changes of Q_{rr} are normalized to the Q_{rr}^* (Q_{rr}^* – see data sheet)

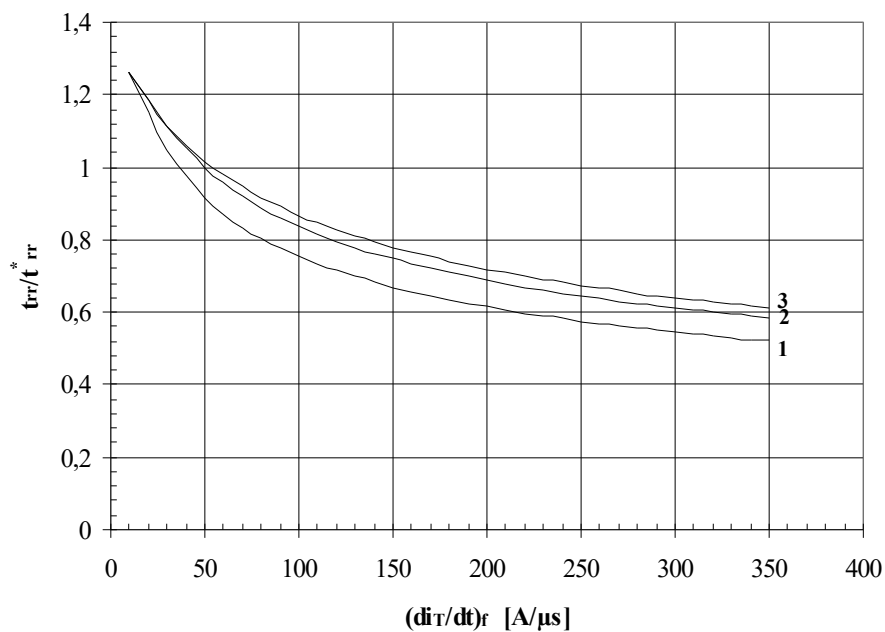


Fig. 8 Reverse recovery time t_{rr} vs. Rate of fall of on-state current di_R/dt

1 – $I_{TM} = 0.5 \cdot I_{TAV}$

2 – $I_{TM} = I_{TAV}$,

3 – $I_{TM} = 1.5 \cdot I_{TAV}$

Conditions: $T_j = T_{j \max}$; $V_R = 100$ V

Typical changes of t_{rr} are normalized to the t_{rr}^* (t_{rr}^* – see data sheet)

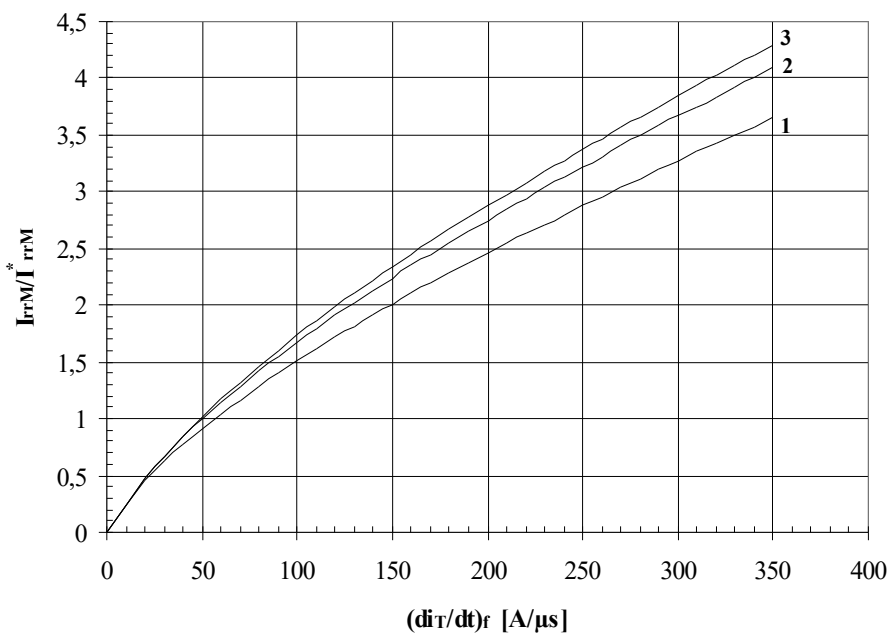


Fig. 9 Peak reverse recovery current I_{rr} vs. Rate of fall of on-state current di_R/dt

1 – $I_{TM} = 0.5 \cdot I_{TAV}$

2 – $I_{TM} = I_{TAV}$,

3 – $I_{TM} = 1.5 \cdot I_{TAV}$

Conditions: $T_j = T_{j \max}$; $V_R = 100$ V

Typical changes of I_{rr} are normalized to the I_{rr}^* (I_{rr}^* – see data sheet)

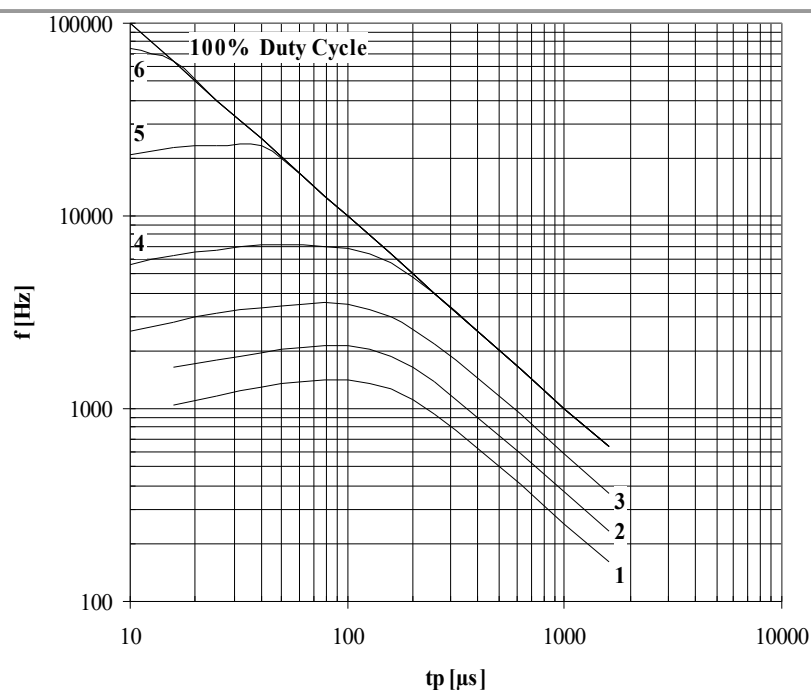


Fig. 10 Sine wave frequency ratings

- 1 – $I_{TM} = 5000 \text{ A}$
- 2 – $I_{TM} = 4000 \text{ A}$
- 3 – $I_{TM} = 3000 \text{ A}$
- 4 – $I_{TM} = 2000 \text{ A}$
- 5 – $I_{TM} = 1000 \text{ A}$
- 6 – $I_{TM} = 500 \text{ A}$

Conditions: $V_R \leq 3 \text{ V}$; $T_C = 55 \text{ }^\circ\text{C}$

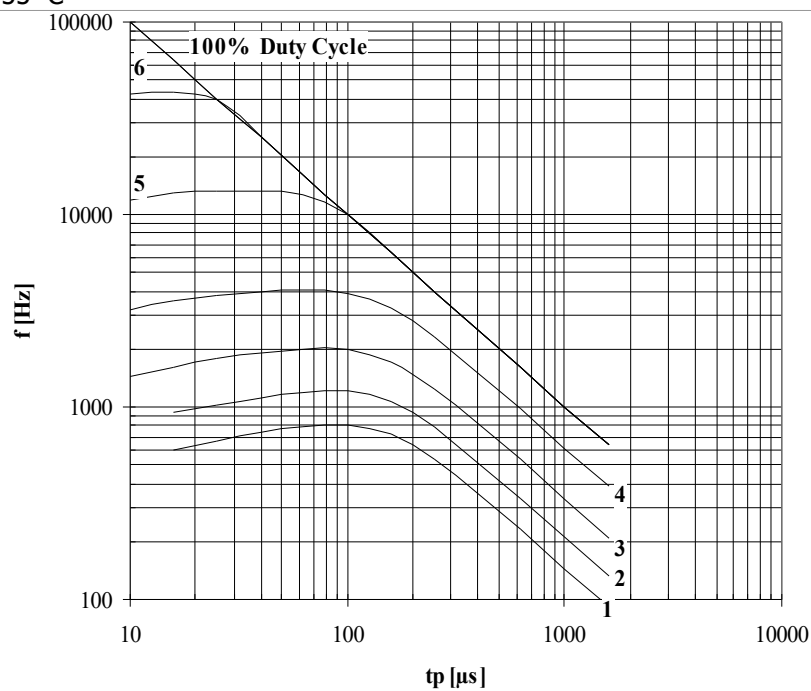


Fig. 11 Sine wave frequency ratings

- 1 – $I_{TM} = 5000 \text{ A}$
- 2 – $I_{TM} = 4000 \text{ A}$
- 3 – $I_{TM} = 3000 \text{ A}$
- 4 – $I_{TM} = 2000 \text{ A}$
- 5 – $I_{TM} = 1000 \text{ A}$
- 6 – $I_{TM} = 500 \text{ A}$

Conditions: $V_R \leq 3 \text{ V}$; $T_C = 80 \text{ }^\circ\text{C}$

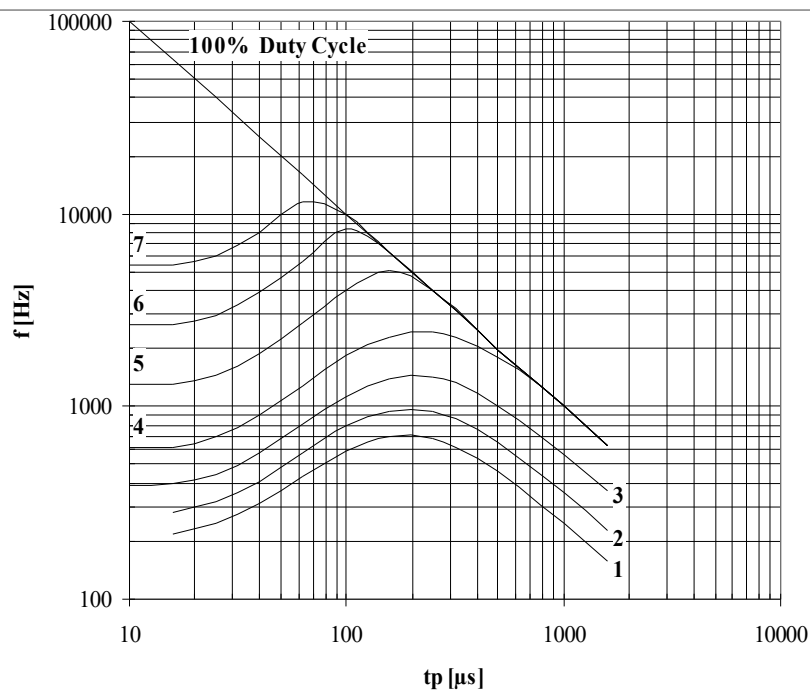


Fig. 12 Sine wave frequency ratings

- 1 – $I_{TM} = 5000$ A
- 2 – $I_{TM} = 4000$ A
- 3 – $I_{TM} = 3000$ A
- 4 – $I_{TM} = 2000$ A
- 5 – $I_{TM} = 1000$ A
- 6 – $I_{TM} = 500$ A
- 7 – $I_{TM} = 250$ A

Conditions: $V_R = 0.67 \cdot V_{RRM}$; $T_C = 55$ °C

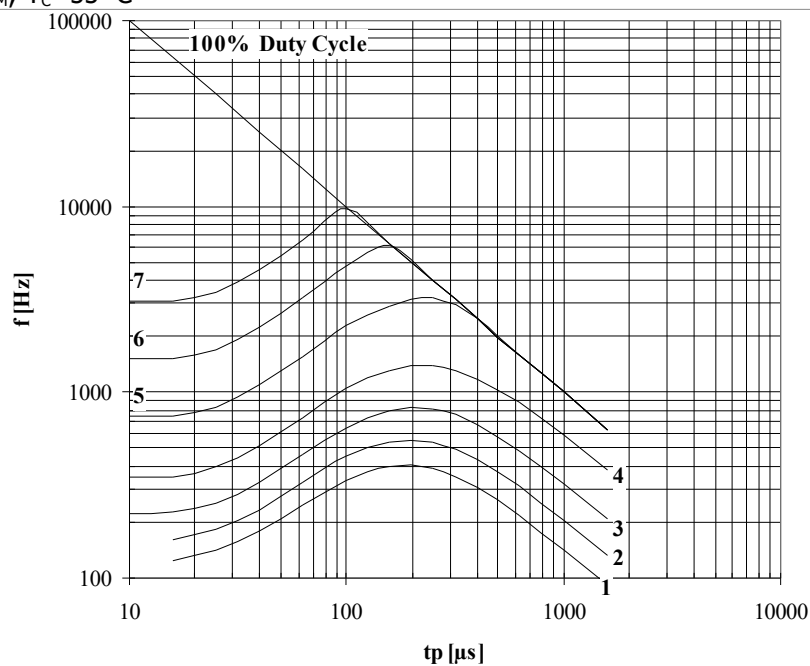


Fig. 13 Sine wave frequency ratings

- 1 – $I_{TM} = 5000$ A
- 2 – $I_{TM} = 4000$ A
- 3 – $I_{TM} = 3000$ A
- 4 – $I_{TM} = 2000$ A
- 5 – $I_{TM} = 1000$ A
- 6 – $I_{TM} = 500$ A
- 7 – $I_{TM} = 250$ A

Conditions: $V_R = 0.67 \cdot V_{RRM}$; $T_C = 80$ °C

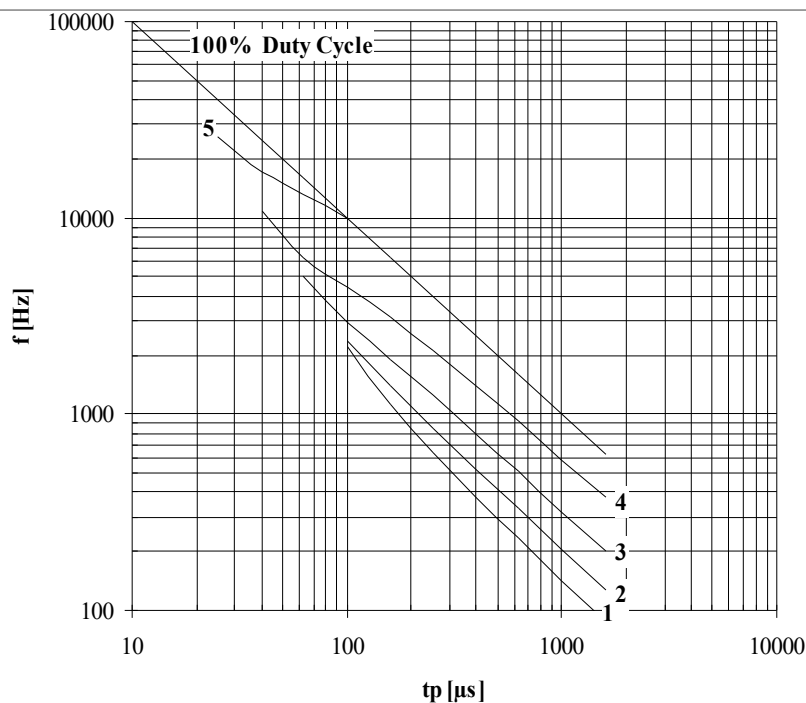


Fig. 14 Square wave frequency ratings

- 1 – $I_{TM} = 5000$ A
- 2 – $I_{TM} = 4000$ A
- 3 – $I_{TM} = 3000$ A
- 4 – $I_{TM} = 2000$ A
- 5 – $I_{TM} = 1000$ A

Conditions: $V_R \leq 3$ V; $T_C = 55$ °C; $di_F/dt = di_R/dt = 100$ A/μs

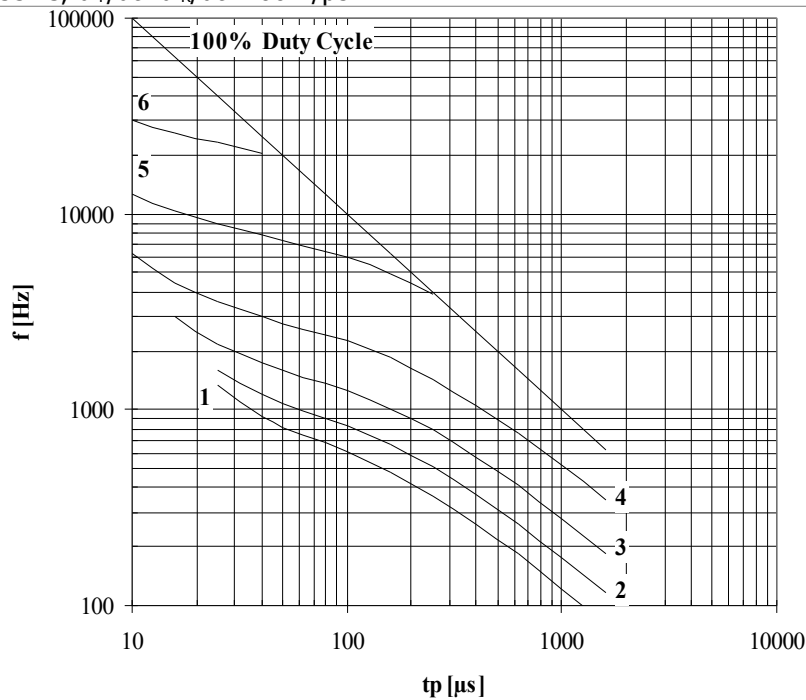


Fig. 15 Square wave frequency ratings

- 1 – $I_{TM} = 5000$ A
- 2 – $I_{TM} = 4000$ A
- 3 – $I_{TM} = 3000$ A
- 4 – $I_{TM} = 2000$ A
- 5 – $I_{TM} = 1000$ A
- 6 – $I_{TM} = 500$ A

Conditions: $V_R \leq 3$ V; $T_C = 55$ °C; $di_F/dt = di_R/dt = 500$ A/μs

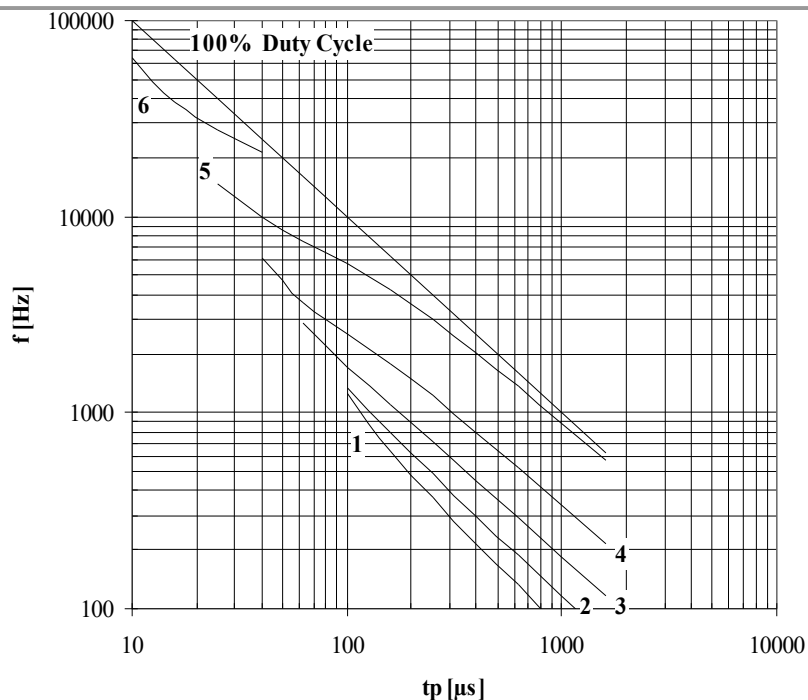


Fig. 16 Square wave frequency ratings

- 1 – $I_{TM} = 5000 \text{ A}$
- 2 – $I_{TM} = 4000 \text{ A}$
- 3 – $I_{TM} = 3000 \text{ A}$
- 4 – $I_{TM} = 2000 \text{ A}$
- 5 – $I_{TM} = 1000 \text{ A}$
- 6 – $I_{TM} = 500 \text{ A}$

Conditions: $V_R \leq 3 \text{ V}$; $T_C = 80 \text{ }^\circ\text{C}$; $di_F/dt = di_R/dt = 100 \text{ A}/\mu\text{s}$

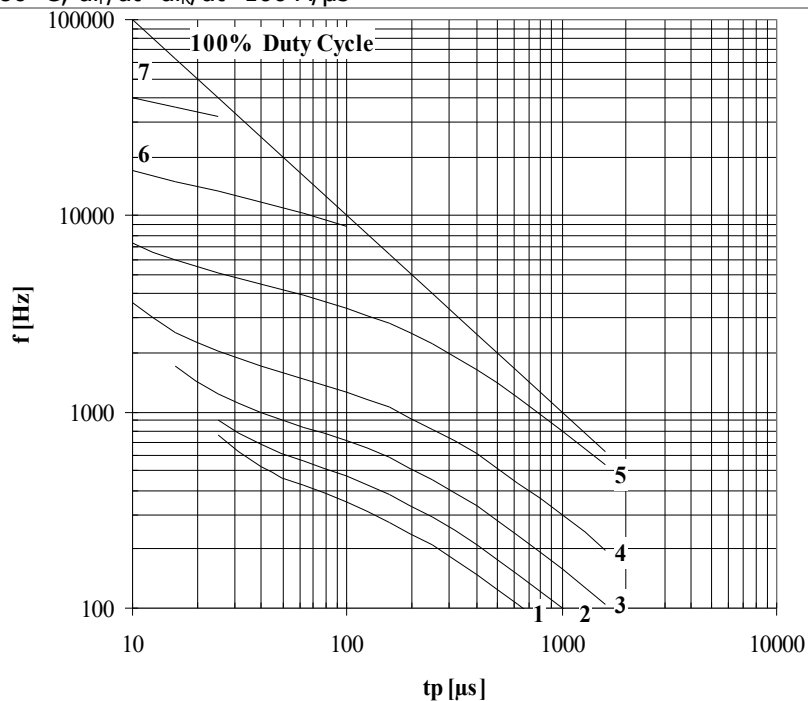


Fig. 17 Square wave frequency ratings

- 1 – $I_{TM} = 5000 \text{ A}$
- 2 – $I_{TM} = 4000 \text{ A}$
- 3 – $I_{TM} = 3000 \text{ A}$
- 4 – $I_{TM} = 2000 \text{ A}$
- 5 – $I_{TM} = 1000 \text{ A}$
- 6 – $I_{TM} = 500 \text{ A}$
- 7 – $I_{TM} = 250 \text{ A}$

Conditions: $V_R \leq 3 \text{ V}$; $T_C = 80 \text{ }^\circ\text{C}$; $di_F/dt = di_R/dt = 500 \text{ A}/\mu\text{s}$

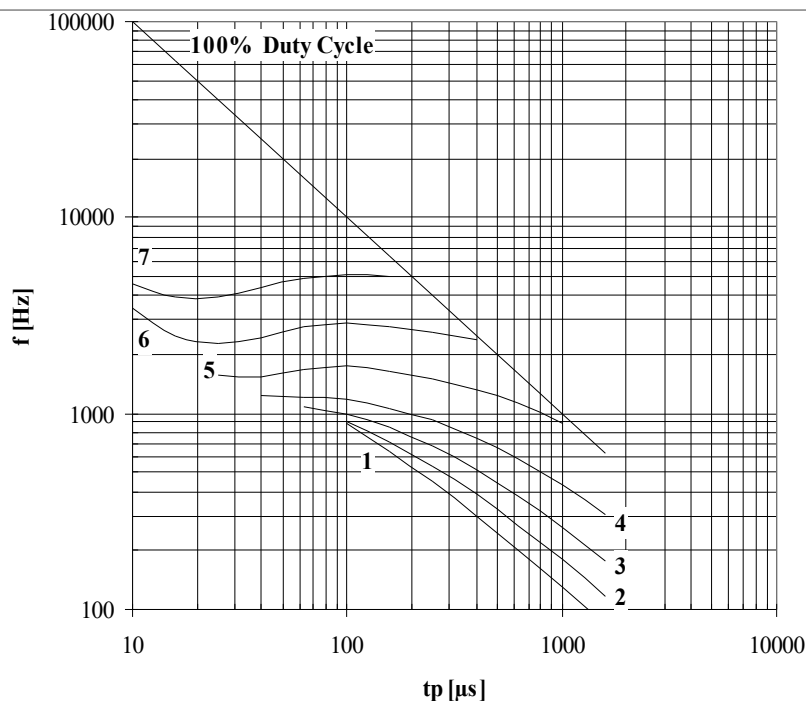


Fig. 18 Square wave frequency ratings

- 1 – $I_{TM} = 5000 \text{ A}$
- 2 – $I_{TM} = 4000 \text{ A}$
- 3 – $I_{TM} = 3000 \text{ A}$
- 4 – $I_{TM} = 2000 \text{ A}$
- 5 – $I_{TM} = 1000 \text{ A}$
- 6 – $I_{TM} = 500 \text{ A}$
- 7 – $I_{TM} = 250 \text{ A}$

Conditions: $V_R = 0.67 \cdot V_{RRM}$; $T_C = 55 \text{ }^\circ\text{C}$; $di_F/dt = di_R/dt = 100 \text{ A}/\mu\text{s}$

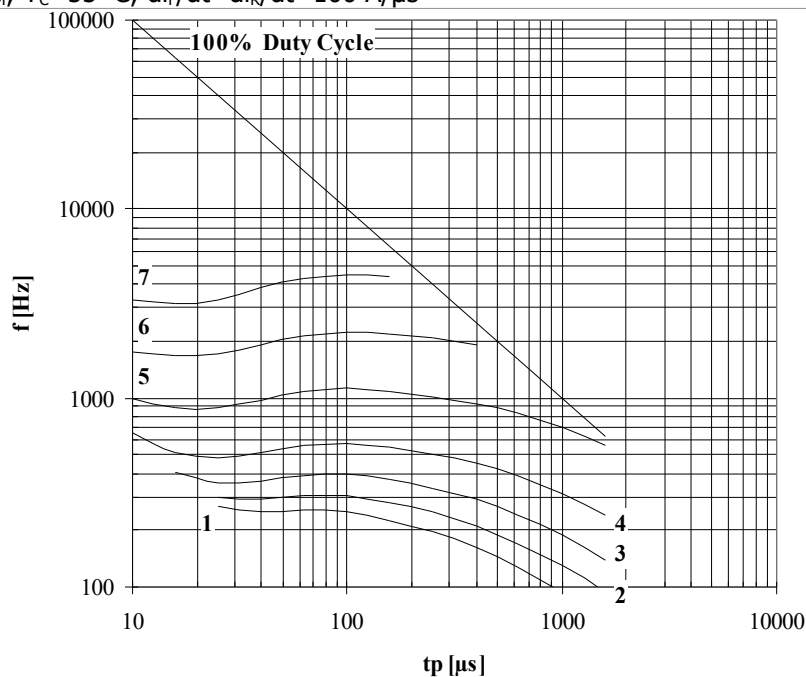


Fig. 19 Square wave frequency ratings

- 1 – $I_{TM} = 5000 \text{ A}$
- 2 – $I_{TM} = 4000 \text{ A}$
- 3 – $I_{TM} = 3000 \text{ A}$
- 4 – $I_{TM} = 2000 \text{ A}$
- 5 – $I_{TM} = 1000 \text{ A}$
- 6 – $I_{TM} = 500 \text{ A}$
- 7 – $I_{TM} = 250 \text{ A}$

Conditions: $V_R = 0.67 \cdot V_{RRM}$; $T_C = 55 \text{ }^\circ\text{C}$; $di_F/dt = di_R/dt = 500 \text{ A}/\mu\text{s}$

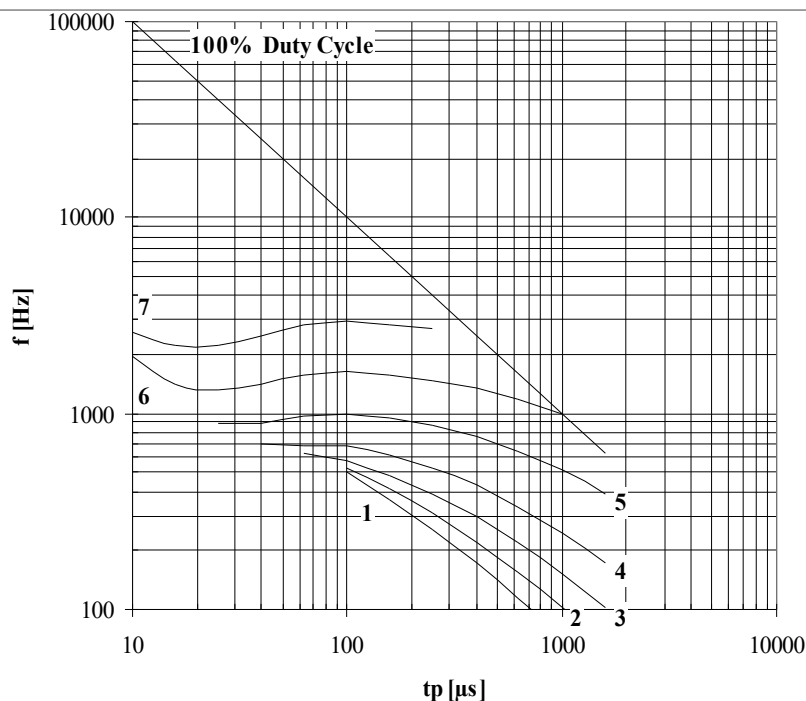


Fig. 20 Square wave frequency ratings

- 1 – $I_{TM} = 5000 \text{ A}$
- 2 – $I_{TM} = 4000 \text{ A}$
- 3 – $I_{TM} = 3000 \text{ A}$
- 4 – $I_{TM} = 2000 \text{ A}$
- 5 – $I_{TM} = 1000 \text{ A}$
- 6 – $I_{TM} = 500 \text{ A}$
- 7 – $I_{TM} = 250 \text{ A}$

Conditions: $V_R = 0.67 \cdot V_{RRM}$; $T_C = 80 \text{ }^\circ\text{C}$; $di_F/dt = di_R/dt = 100 \text{ A}/\mu\text{s}$

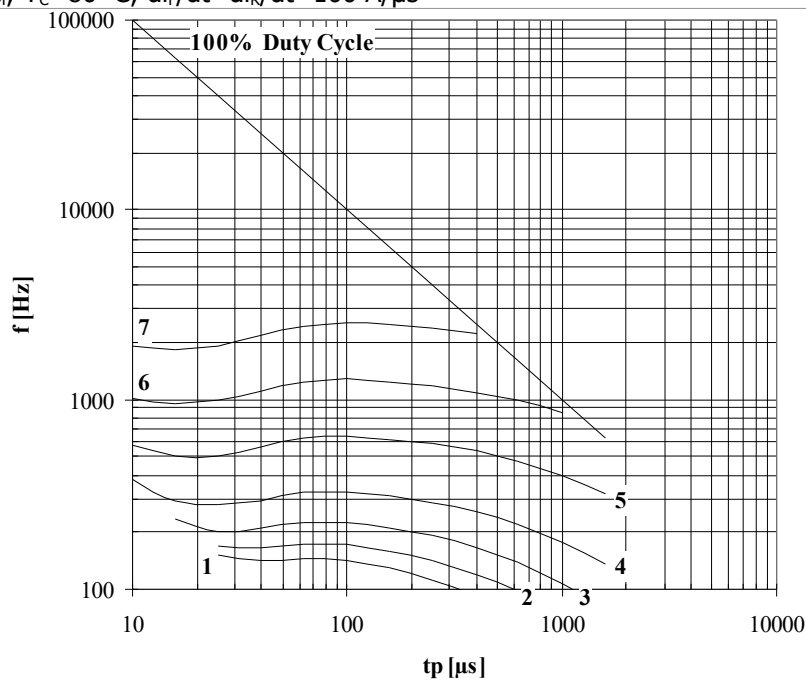


Fig. 21 Square wave frequency ratings

- 1 – $I_{TM} = 5000 \text{ A}$
- 2 – $I_{TM} = 4000 \text{ A}$
- 3 – $I_{TM} = 3000 \text{ A}$
- 4 – $I_{TM} = 2000 \text{ A}$
- 5 – $I_{TM} = 1000 \text{ A}$
- 6 – $I_{TM} = 500 \text{ A}$
- 7 – $I_{TM} = 250 \text{ A}$

Conditions: $V_R = 0.67 \cdot V_{RRM}$; $T_C = 80 \text{ }^\circ\text{C}$; $di_F/dt = di_R/dt = 500 \text{ A}/\mu\text{s}$

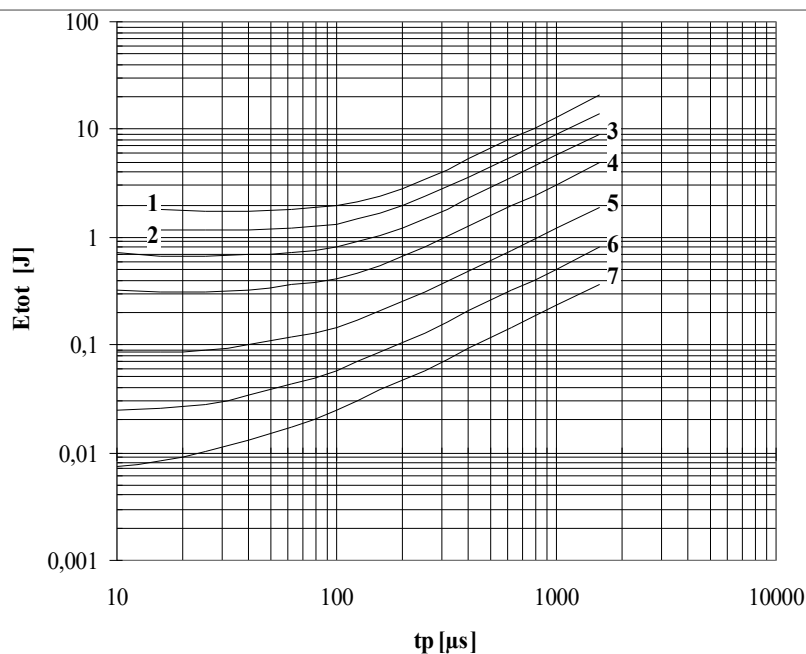


Fig. 22 Sine wave loss energy per pulse

- 1 – $I_{TM} = 5000 \text{ A}$
- 2 – $I_{TM} = 4000 \text{ A}$
- 3 – $I_{TM} = 3000 \text{ A}$
- 4 – $I_{TM} = 2000 \text{ A}$
- 5 – $I_{TM} = 1000 \text{ A}$
- 6 – $I_{TM} = 500 \text{ A}$
- 7 – $I_{TM} = 250 \text{ A}$

Conditions: $V_R \leq 3 \text{ V}$

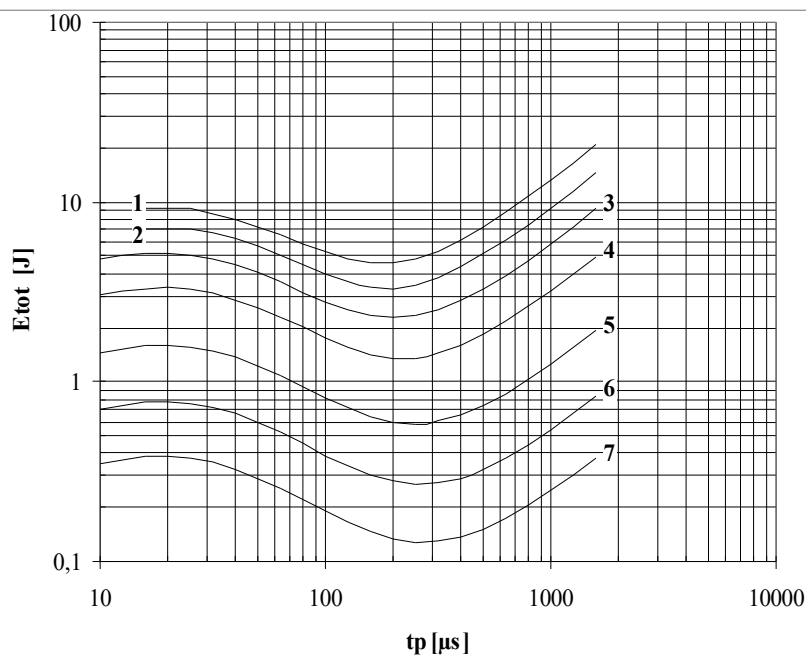


Fig. 23 Sine wave loss energy per pulse

- 1 – $I_{TM} = 5000 \text{ A}$
- 2 – $I_{TM} = 4000 \text{ A}$
- 3 – $I_{TM} = 3000 \text{ A}$
- 4 – $I_{TM} = 2000 \text{ A}$
- 5 – $I_{TM} = 1000 \text{ A}$
- 6 – $I_{TM} = 500 \text{ A}$
- 7 – $I_{TM} = 250 \text{ A}$

Conditions: $V_R = 0.67 \cdot V_{RRM}$

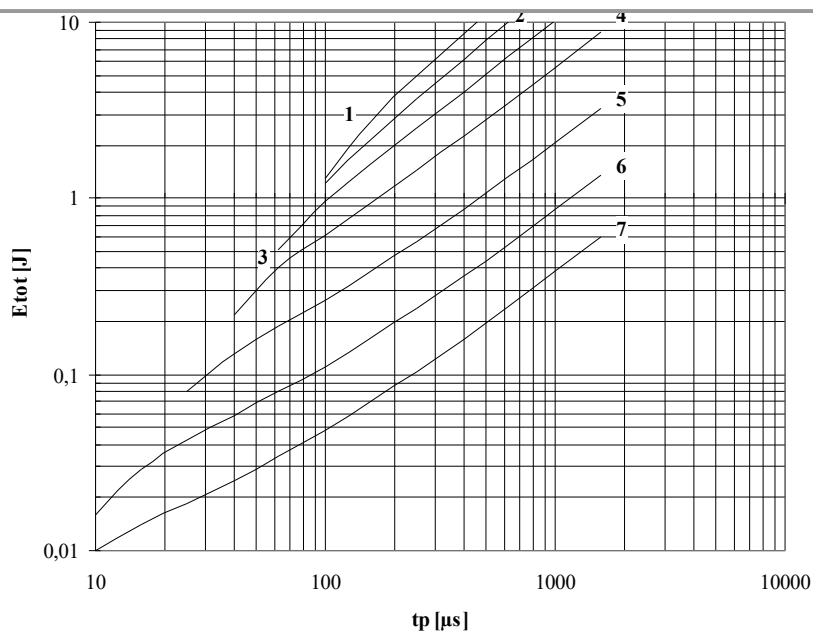


Fig. 24 Square wave loss energy per pulse

- 1 – $I_{TM} = 5000$ A
- 2 – $I_{TM} = 4000$ A
- 3 – $I_{TM} = 3000$ A
- 4 – $I_{TM} = 2000$ A
- 5 – $I_{TM} = 1000$ A
- 6 – $I_{TM} = 500$ A
- 7 – $I_{TM} = 250$ A

Conditions: $V_R \leq 3$ V; $di_F/dt = di_R/dt = 100$ A/ μ s

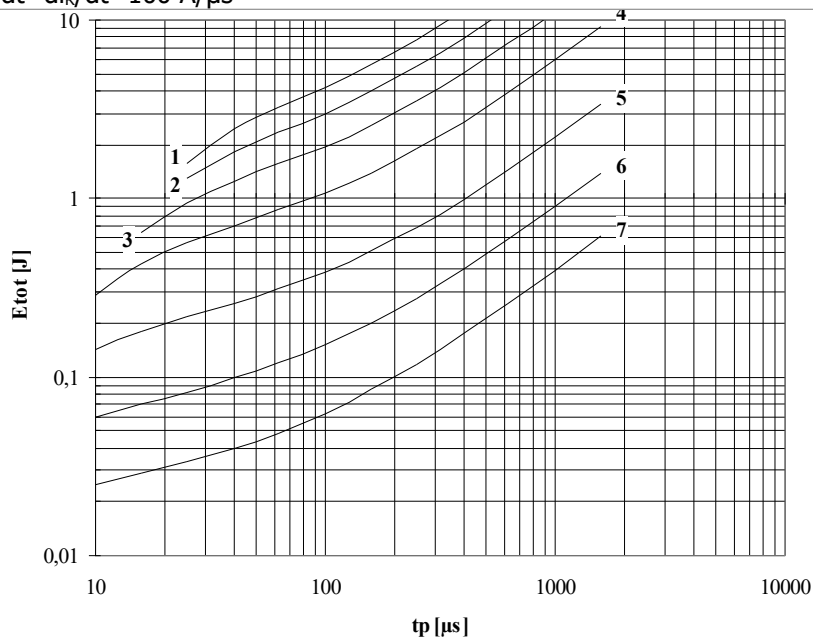


Fig. 25 Square wave loss energy per pulse

- 1 – $I_{TM} = 5000$ A
- 2 – $I_{TM} = 4000$ A
- 3 – $I_{TM} = 3000$ A
- 4 – $I_{TM} = 2000$ A
- 5 – $I_{TM} = 1000$ A
- 6 – $I_{TM} = 500$ A
- 7 – $I_{TM} = 250$ A

Conditions: $V_R \leq 3$ V; $di_F/dt = di_R/dt = 500$ A/ μ s

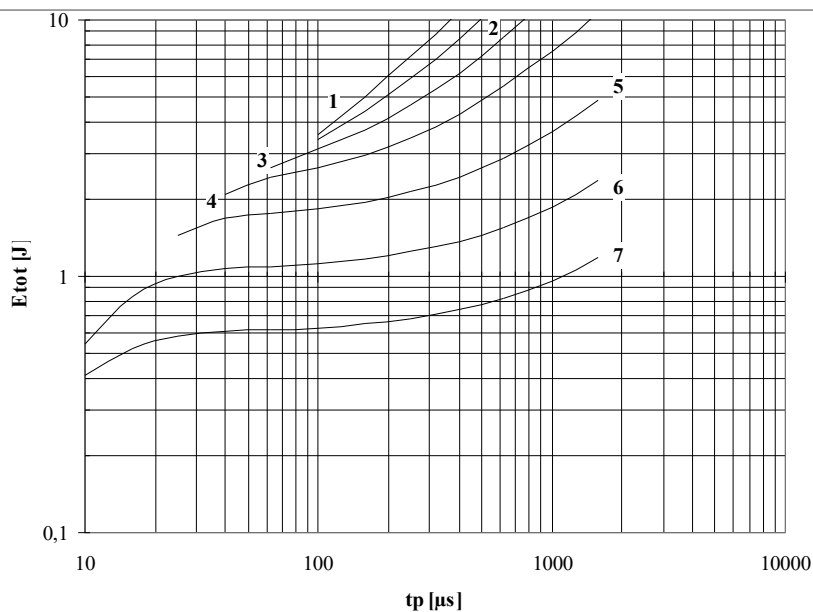


Fig. 26 Square wave loss energy per pulse

- 1 – $I_{TM} = 5000$ A
- 2 – $I_{TM} = 4000$ A
- 3 – $I_{TM} = 3000$ A
- 4 – $I_{TM} = 2000$ A
- 5 – $I_{TM} = 1000$ A
- 6 – $I_{TM} = 500$ A
- 7 – $I_{TM} = 250$ A

Conditions: $V_R = 0.67 \cdot V_{RRM}$; $di_F/dt = di_R/dt = 100$ A/ μ s

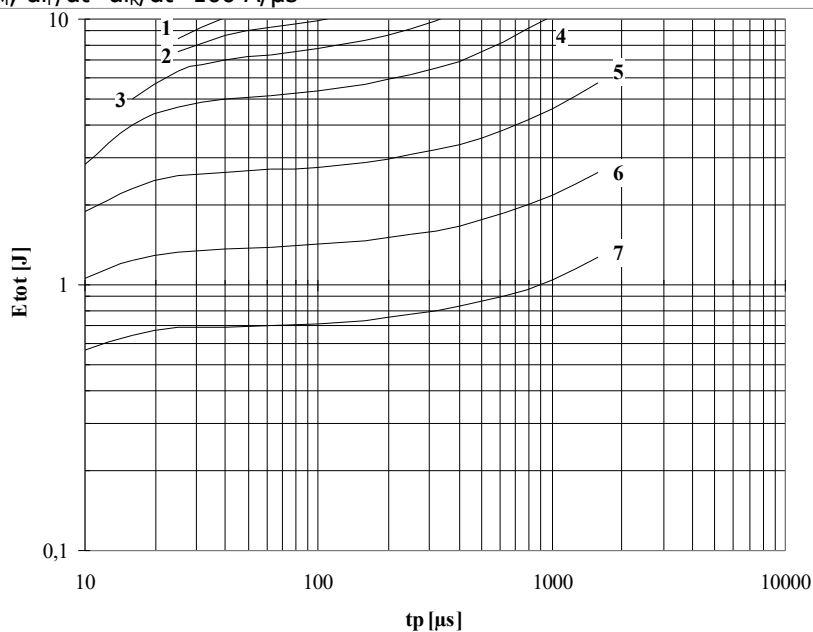


Fig. 27 Square wave loss energy per pulse

- 1 – $I_{TM} = 5000$ A
- 2 – $I_{TM} = 4000$ A
- 3 – $I_{TM} = 3000$ A
- 4 – $I_{TM} = 2000$ A
- 5 – $I_{TM} = 1000$ A
- 6 – $I_{TM} = 500$ A
- 7 – $I_{TM} = 250$ A

Conditions: $V_R = 0.67 \cdot V_{RRM}$; $di_F/dt = di_R/dt = 500$ A/ μ s

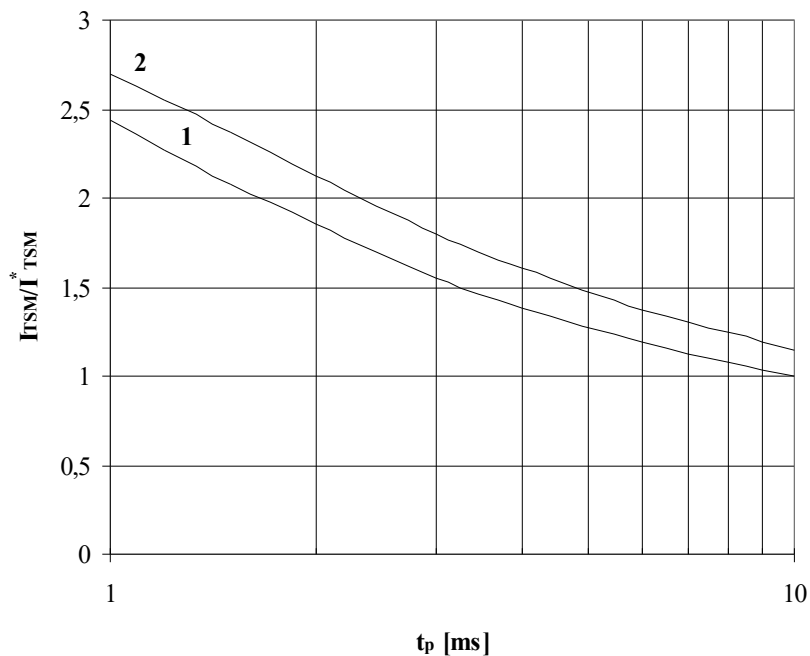


Fig. 28 The surge current I_{TSM} vs. Duration of surge t_p for a half-sine wave
 1 – $T_j=125$ °C
 2 – $T_j=25$ °C

Conditions: $V_R=0$ V – the peak value of reverse voltage which is applied immediately after the surge current
 Typical changes of I_{TSM} are normalized to the I_{TSM}^* (I_{TSM}^* – see data sheet, $T_j=T_{j\max}$)

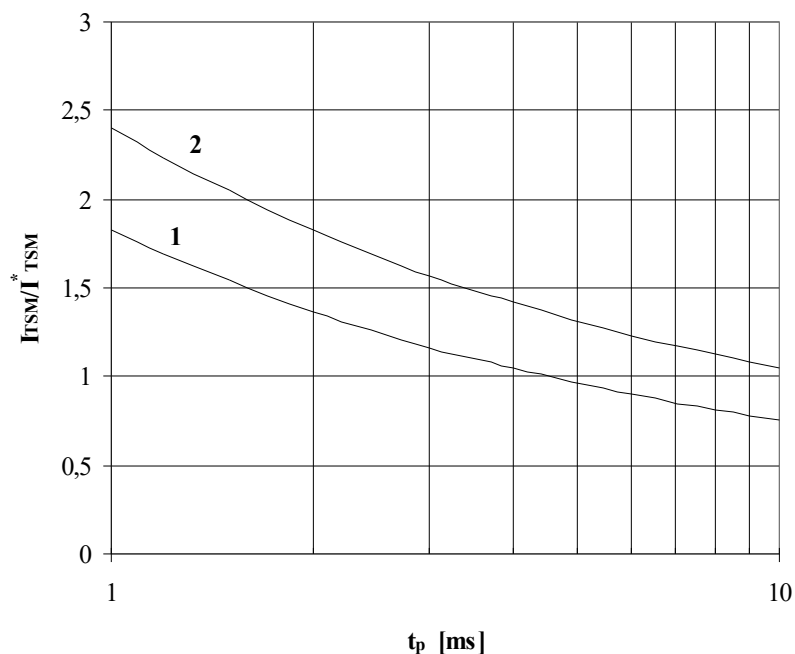


Fig. 29 The surge current I_{TSM} vs. Duration of surge t_p for a half-sine wave
 1 – $T_j=125$ °C
 2 – $T_j=25$ °C

Conditions: $V_R=0.8 \cdot V_{RRM}$ – the peak value of reverse voltage which is applied immediately after the surge current
 Typical changes of I_{TSM} are normalized to the I_{TSM}^* (I_{TSM}^* – see data sheet, $T_j=T_{j\max}$)

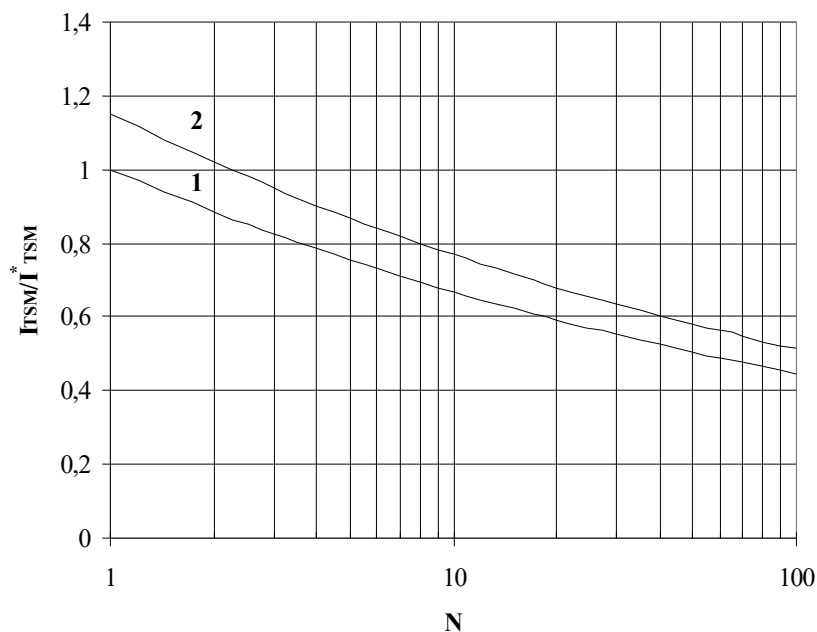


Fig. 30 The surge current I_{TSM} vs. Number of half-sine waves at 50 Hz

1 – $T_j = 125^\circ\text{C}$

2 – $T_j = 25^\circ\text{C}$

Conditions: $V_R = 0\text{ V}$ – the peak value of reverse voltage which is applied immediately after the surge current

Typical changes of I_{TSM} are normalized to the I_{TSM}^* (I_{TSM}^* – see data sheet, $T_j = T_{j\text{max}}$)

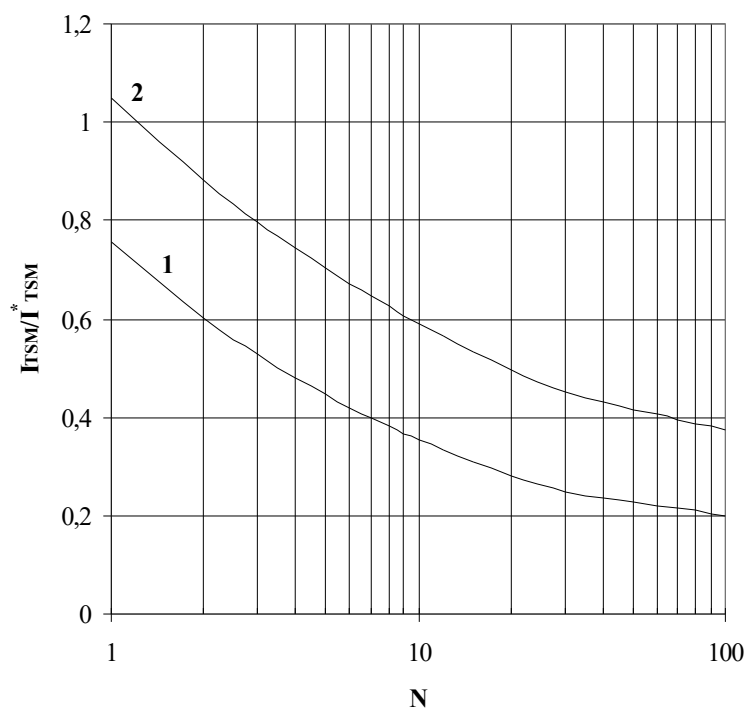


Fig. 31 The surge current I_{TSM} vs. Number of half-sine waves at 50 Hz

1 – $T_j = 125^\circ\text{C}$

2 – $T_j = 25^\circ\text{C}$

Conditions: $V_R = 0.8 V_{RRM}$ – the peak value of reverse voltage which is applied immediately after the surge current

Typical changes of I_{TSM} are normalized to the I_{TSM}^* (I_{TSM}^* – see data sheet, $T_j = T_{j\text{max}}$)