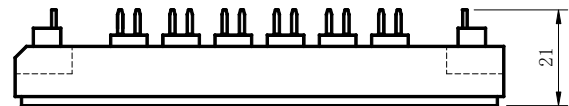
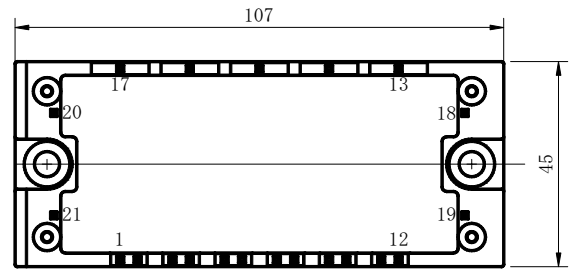
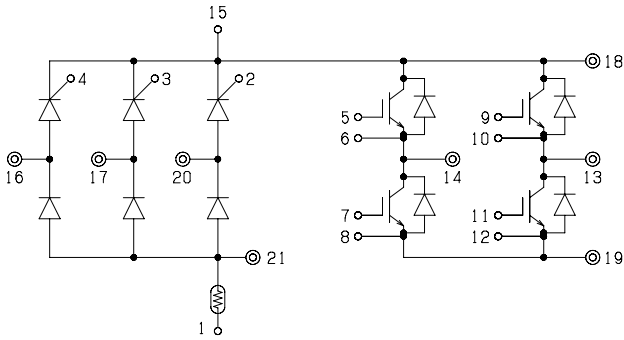


□ 回路図 : *CIRCUIT*

□ 概略図 : *SCHEMATIC DIAGRAM*

Dimension: [mm]



□ 最大定格 : Maximum Ratings (Tc=25°C)

Type	Item	Symbol	Rated Value	Unit	
3 Phase Rectification Converter	繰り返しピークオフ電圧 Repetitive peak Off-state voltage	V_{DRM}	800	V	
	非繰り返しピーク逆電圧 Non-Repetitive peak Off-state voltage	V_{DSM}	900		
	繰り返しピーク逆電圧 Repetitive peak reverse voltage	V_{RRM}	800		
	非繰り返しピーク逆電圧 Non-Repetitive peak reverse voltage	V_{RSM}	900		
	平均出力電流 Average rectified out-put current	$I_{O(AV)}$	30 (3-Phase Full Wave, Rectified)	A	
	サージ順電流 Surge Forward current	I_{FSM}	200 (Half Sine Wave, 1 Pulse, Non-Repetitive)		
	電流二乗時間積 I Squared t	I^2t	200 (2~10ms)	A ² s	
	臨界オン電流上昇率 Critical Rate of Rise of Turned-On current	di/dt	100 ($V_D=2/3V_{DRM}$, $I_T=I_T(RMS)$, $T_J=125^\circ C$, $I_G=200mA$, $diG/dt=0.2A/\mu s$)	A/ μs	
	ピークゲート電力損失 Peake Gate Power	P_{GM}	5	W	
	平均ゲート電力損失 Average Gate Power	$P_{G(AV)}$	0.5		
	ピークゲート電流 Peake Gate Current	I_{GM}	2	A	
	ピークゲート電圧 Peake Gate Voltage	V_{GM}	10	V	
	ピークゲート逆電圧 Peake Gate Reverse Voltage	V_{RRM}	5		
Inverter	コレクタ・エミッタ間電圧 Collector-Emitter Voltage	V_{CES}	600	V	
	ゲート・エミッタ間電圧 Gate-Emitter Voltage	V_{GES}	± 20		
	コレクタ電流 Collector Current	DC	I_C	50	A
		1ms	I_{CP}	100	
	順電流 Forward current	DC	I_F	50	
1ms		I_{FM}	100		
コレクタ損失 Collector Power Dissipation	P_c	103	W		

□ 最大定格 : Maximum Ratings (Tc=25°C)

Item	Symbol	Rated Value	Unit
接合温度 Operating Junction Temperature Rang	T _{jw}	-40~+125 (Converter) -40~+150 (Inverter)	°C
保存温度 Storage Temperature Range	T _{stg}	-40~+125	
絶縁耐圧 (Terminal to Base) Isolation Voltage	V _{iso}	2,500 (AC, 1minute)	V (RMS)
絶縁抵抗 (Terminal to Base DC500V) Isolation resistance	R _{iso}	500	MΩ
締め付けトルク Mounting Torque	F _{tor}	M5 : 2.0	N・m

□ 電気的特性 : Electrical Characteristics (Tc=25°C Unless otherwise noted)

Type	Characteristics	Test Condition	Min.	Typ.	Max.	Unit
Thermistor	抵抗値 Resistance	25°C	—	5.00	—	kΩ
		75°C	—	0.97	—	
		125°C	—	0.27	—	
	B定数 B-Value	25°C/50°C	—	3,375	—	K
		25°C/85°C	—	3,420	—	
熱時定数 Thermal Time Constant		—	—	10	—	s

Type	Characteristics	Symbol	Test Condition	Min.	Typ.	Max.	Unit	
3 Phase Rectification Converter	ピークオフ電流 *1 Peak Off-State current	I _{DM}	V _{DM} =V _{DRM} , T _j =125°C	—	—	10	mA	
	ピーク逆電流 *1 Peak reverse current	I _R	V _{RM} =V _{RRM} , T _j =150°C	—	—	10		
	ピークオン電圧 *1 Peak On-State Voltage	V _{TM}	I _{TM} =30A	—	—	1.40	V	
	ピーク順電圧 *1 Peak Forward Voltage	V _F	I _{FM} =30A	—	—	1.40		
	トリガゲート電流 Gate Current to Trigger	I _{GT}	V _D =6V	T _j =-40°C	—	—	100	mA
				T _j =25°C	—	—	50	
				T _j =125°C	—	—	25	
	トリガゲート電圧 Gate Voltage to Trigger	V _{GT}	I _T =1A	T _j =-40°C	—	—	4	V
				T _j =25°C	—	—	2.5	
				T _j =125°C	—	—	2	
	非トリガゲート電圧 Gate Non-Trigger Voltage	V _{GD}	T _j =125°C, V _D =2/3V _{DRM}	0.25	—	—		
	臨界オフ電圧上昇率 Critical Rate of Rise of Off-State Voltage	dv/dt	T _j =125°C, V _D =2/3V _{DRM}	100	—	—	V/μs	
	ターンオフ時間 Turn-Off Time	t _q	T _j =125°C, I _{TM} =I _O , I _G =200mA V _D =2/3V _{DRM} , di _G =0.2A/μs	—	80	—	μs	
	ターンオン時間 Turn-On Time	t _{gt}	T _j =25°C, V _D =2/3V _{DRM} I _G =200mA, di _G =0.2A/μs	—	6	—		
遅れ時間 Delay Time	t _d	—		2	—			
立上がり時間 Rise Time	t _r	—		4	—			
ラッチング電流 Latching Current	I _L	T _j =25°C	—	70	—	mA		
保持電流 Holding Current	I _H		—	50	—			

□ 電気的特性 : Electrical Characteristics (Tc=25°C Unless otherwise noted)

Type	Characteristics	Symbol	Test Condition	Min.	Typ.	Max.	Unit	
Inverter	コレクタ遮断電流 Collector-Emitter Cut-Off Current	ICES	VCE=600V, VGE=0V	—	—	1.0	mA	
	ゲート漏れ電流 Gate-Emitter Leakage Current	IGES	VGE=±20V, VCE=0V	—	—	1.0	μA	
	コレクタ・エミッタ間飽和電圧 Collector-Emitter Saturation Voltage	VCE(sat)	IC=50A, VGE=15V	—	2.1	2.6	V	
	ゲートしきい値電圧 Gate-Emitter Threshold Voltage	VGE(th)	IC=50mA, VCE=5V	4.0	—	8.0	V	
	入力容量 Input Capacitance	Cies	VCE=10V, VGE=0V f=1MHZ	—	2,500	—	pF	
	スイッチング 時間 Switching Time	上昇時間 Rise Time	tr	VCC=300V,	—	0.15	0.30	μs
		ターンオン時間 Turn-on Time	ton	Rt=6.0Ω,	—	0.25	0.40	
		下降時間 Fall Time	tf	VGE=±15V,	—	0.10	0.35	
		ターンオフ時間 Turn-off Time	toff	Rg=20Ω	—	0.35	0.70	
	ピーク順電圧 Peak Forward Voltage	Vf	IF=50A	—	1.9	2.4	V	
逆回復時間 Reverse Recovery Time	trr	IF=50A, VGE=-10V -di/dt=50A/μs	—	0.15	0.25	μs		

*1: 1アーム当たりの値を示す。Per 1 Arm.

□ 熱的特性 : Thermal Characteristics

Characteristics			Test Condition	Min.	Typ.	Max.	Unit	
熱抵抗 Thermal Impedance	Rth(j-c) Junction to Case	3 Phase Rectification	Tyristor	Total	—	—	0.90	°C/W
			Diode		—	—	0.85	
	Inverter	IGBT	Per 1Arm	—	—	1.22		
		Free Wheeling Diode		—	—	2.50		

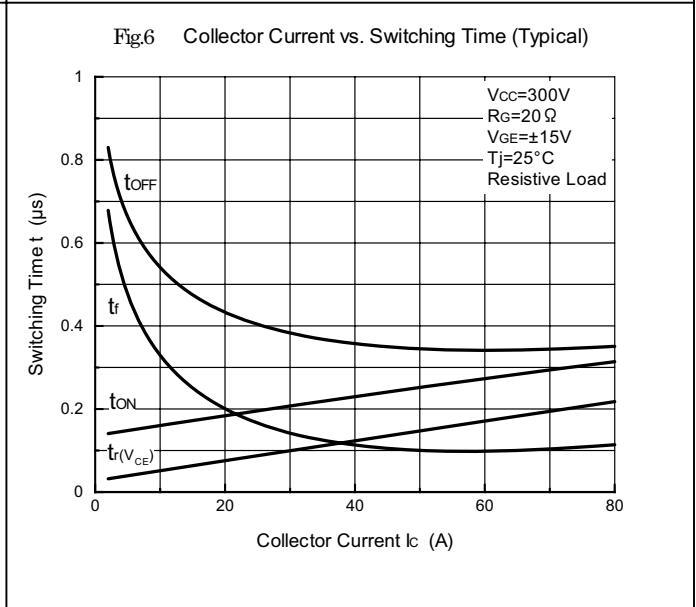
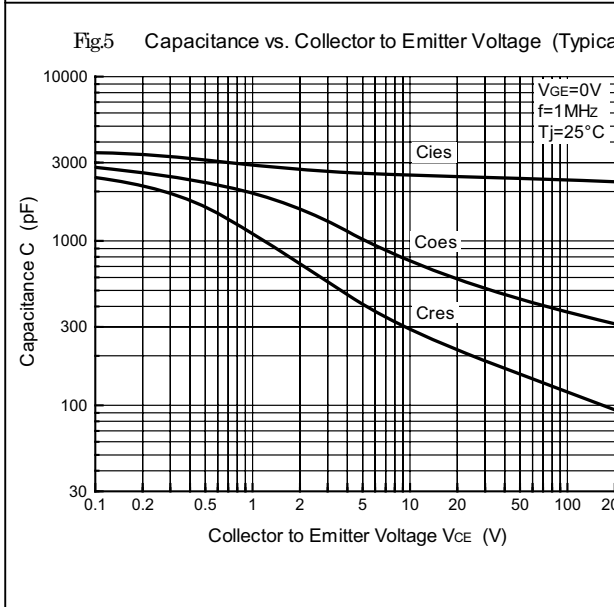
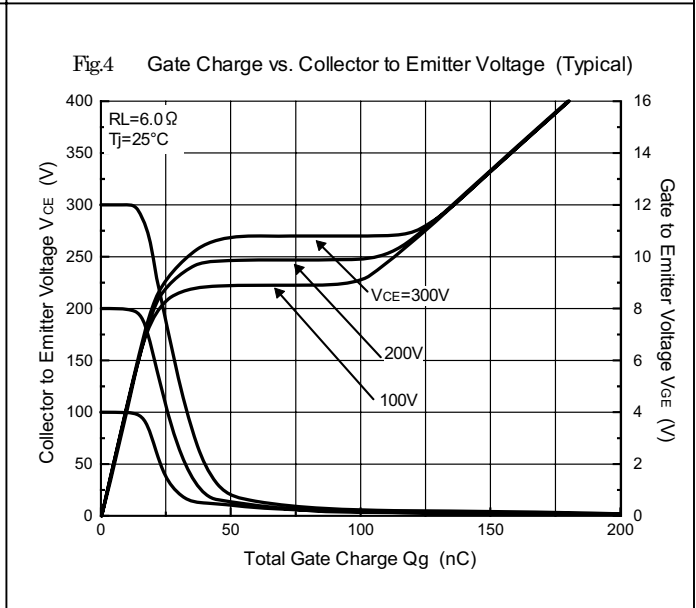
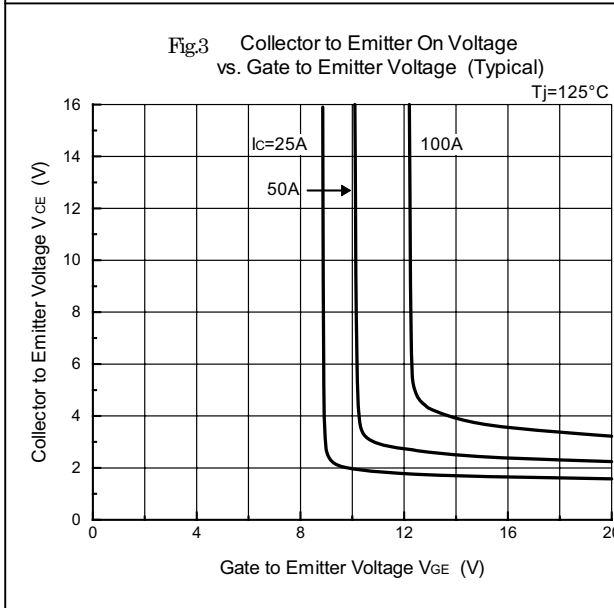
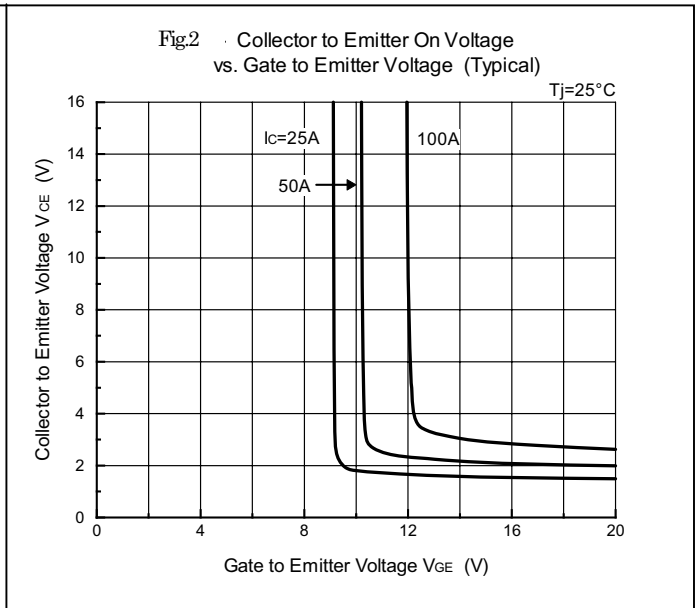
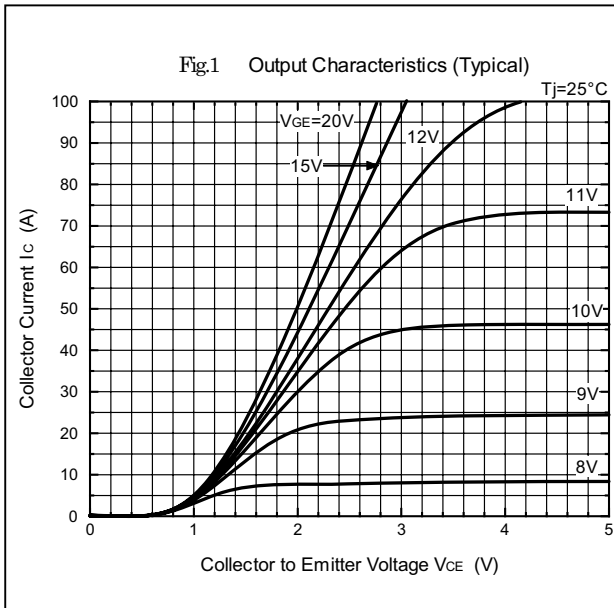


Fig.7 Series Gate Impedance vs. Switching Time (Typical)

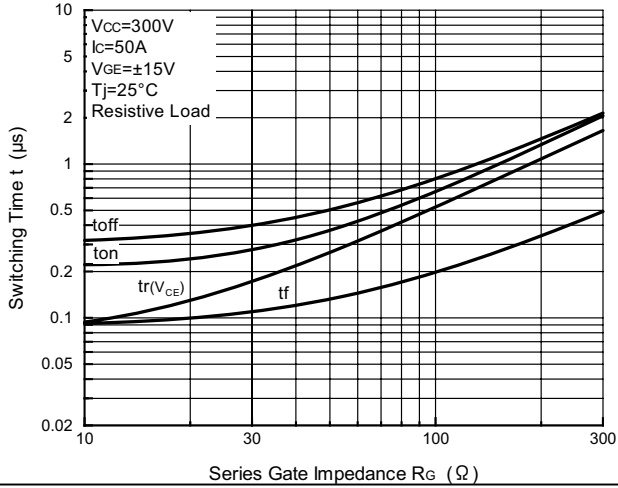


Fig.8 Forward Characteristics of Free Wheeling Diode (Typical)

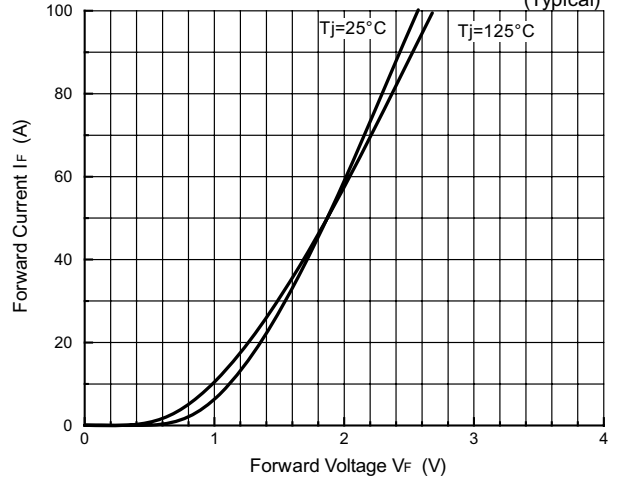


Fig.9 Reverse Recovery Characteristics (Typical)

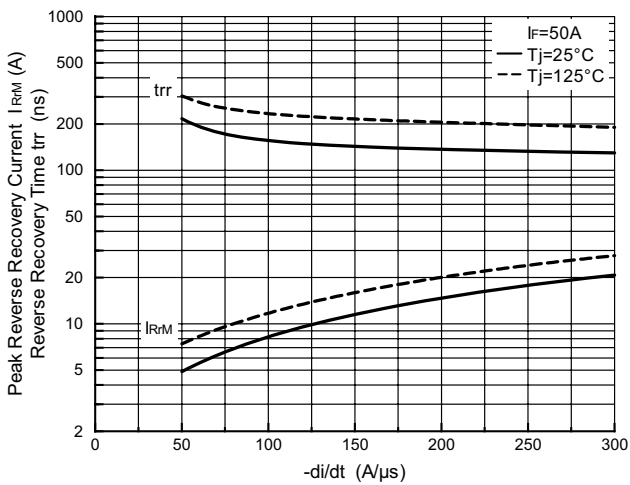


Fig.10 Reverse Bias Safe Operating Area

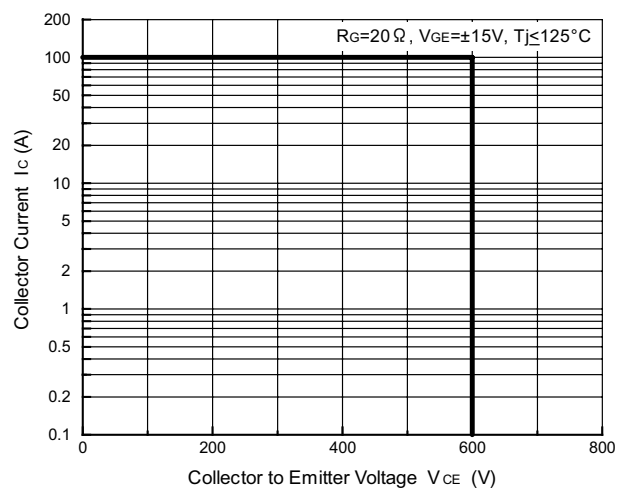


Fig.11 過渡熱抵抗
MAXIMUM TRANSIENT THERMAL IMPEDANCE
Junction to Case

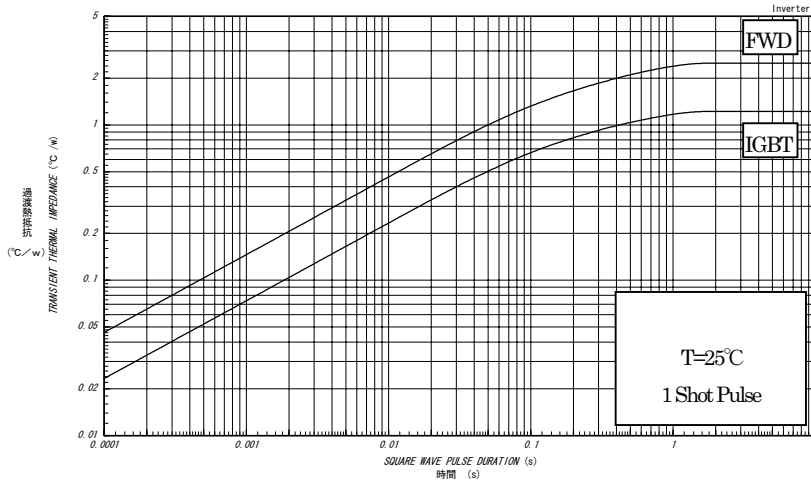


Fig.12 順電圧特性
FORWARD CURRENT VS. VOLTAGE

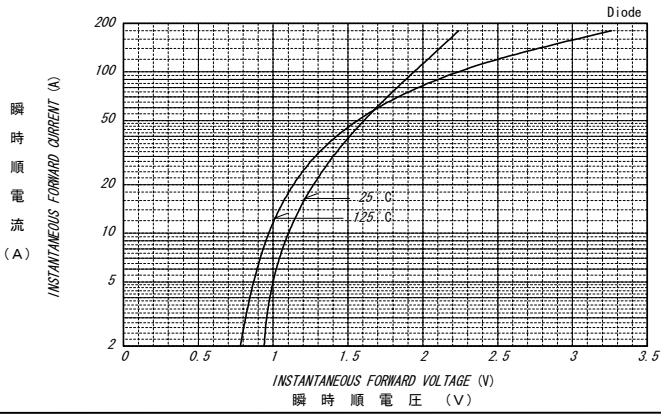


Fig.13 オン電圧特性
ON-STATE CURRENT VS. VOLTAGE

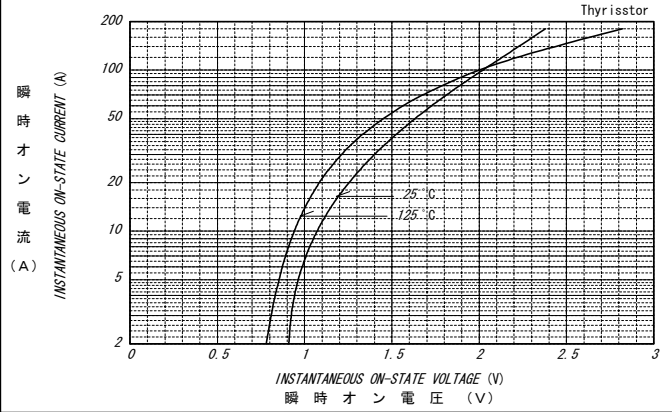


Fig.14 平均順電力損失特性
AVERAGE FORWARD POWER DISSIPATION

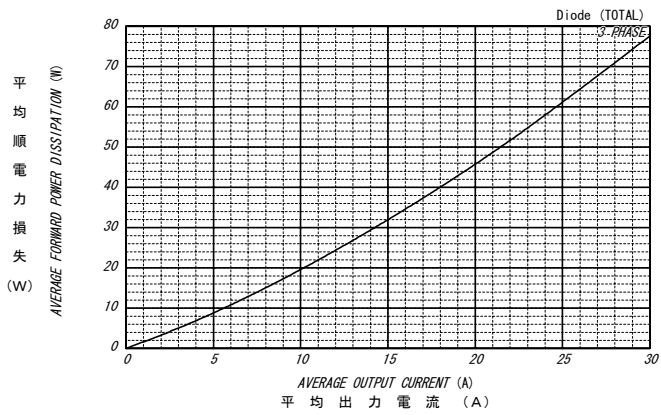


Fig.15 サージ順電流定格
SURGE CURRENT RATINGS

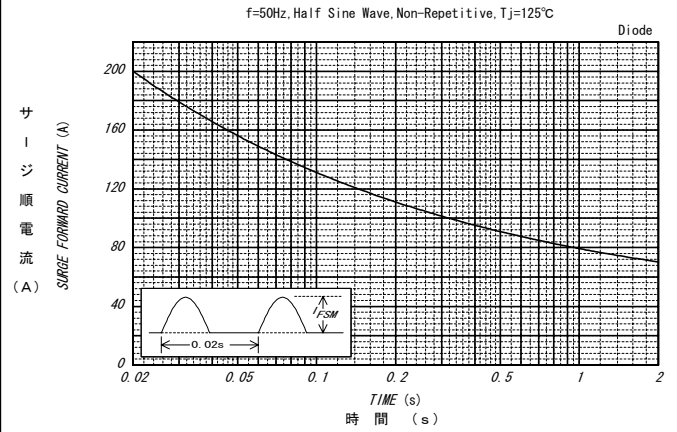


Fig.16 過渡熱抵抗
MAXIMUM TRANSIENT THERMAL IMPEDANCE
Junction to Case

