TOSHIBA BI-DIRECTIONAL TRIODE THYRISTOR SILICON PLANAR TYPE

SM16GZ47,SM16JZ47,SM16GZ47A,SM16JZ47A

AC POWER CONTROL APPLICATIONS

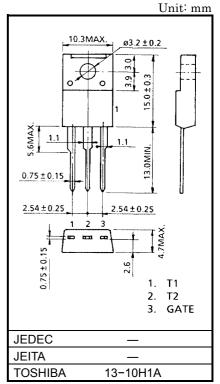
• Repetitive Peak Off–State Voltage : $V_{DRM} = 400, 600V$ • R.M.S On–State Current : $I_{T (RMS)} = 16A$

• High Commutating (dv / dt)

• Isolation Voltage : V_{ISOL} = 1500V AC

MAXIMUM RATINGS

CHARACTER	ISTIC	SYMBOL	RATING	UNIT	
Repetitive Peak	SM16GZ47 SM16GZ47A	. V _{DRM}	400	V	
Off-State Voltage	SM16JZ47 SM16JZ47A	V DRM	600		
R.M.S On-State Currer (Full Sine Waveform To	••	I _{T (RMS)}	16	А	
Peak One Cycle Surge On-State		l=	150 (50Hz)	А	
Current (Non-Repetitive	e)	ITSM	165 (60Hz)	_ ^	
I ² t Limit Value		I ² t	112.5	A ² s	
Critical Rate of Rise of Current	On-State (Note 1)	di / dt	50	A/µs	
Peak Gate Power Dissi	pation	P _{GM}	5	W	
Average Gate Power D	issipation	P _{G (AV)}	0.5	W	
Peak Gate Voltage		V_{GM}	10	V	
Peak Gate Current		I _{GM}	2	Α	
Junction Temperature		Tj	-40~125	°C	
Storage Temperature R	Range	T _{stg}	-40~125	°C	
Isolation Voltage (AC, t	= 1 min.)	V _{ISOL}	1500	V	



Weight: 1.7g

Note 1: di / dt Test condition

 $V_{DRM} = 0.5 \times Rated$ $I_{TM} \le 25A$

t_{gw} ≥ 10µs

t_{ar} ≤ 250ns

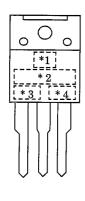
 $igp = IgT \times 2.0$



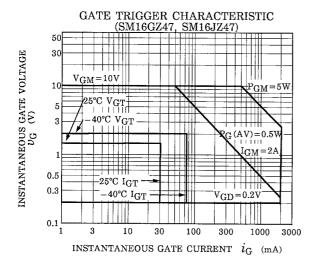
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

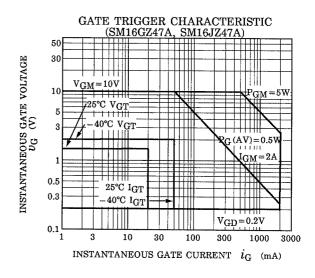
CHARACTERISTIC		SYMBOL	TEST CONDITION		MIN	TYP.	MAX	UNIT		
Repetitive Peak Off-State Current I _{DRM} V _{DRM} = Rated		V _{DRM} = Rated		_	_	20	μA			
Gate Trigger Voltage II		I	V_{GT} $V_{D} = 12V$, $R_{L} = 20\Omega$	V _D = 12V,	T2 (+), Gate (+)	-	_	1.5	V	
		Ш			T2 (+) , Gate (-)	_	_	1.5		
		III		T2 (-) , Gate (-)		_	1.5	v		
		IV			T2 (-) , Gate (+)	_	_	_		
Gate Trigger Current SM1			I			T2 (+), Gate (+)	_	_	30	
	SM16	SM16GZ47				T2 (+) , Gate (-)	_	_	30	
	SM16	SM16JZ47	III			T2 (-) , Gate (-)	_	_	30	mA
			IV	l _{GT}	$V_D = 12V$, $R_L = 20\Omega$	T2 (-) , Gate (+)	_	_	_	
		SM16GZ47A SM16JZ47A	I			T2 (+), Gate (+)	_	_	20	
	SM16		Ш			T2 (+) , Gate (-)		_	20	
	SM16		III			T2 (-) , Gate (-)		_	20	
						T2 (-) , Gate (+)		_	_	
Peak On-State Voltage		V_{TM}	I _{TM} = 25A		_	_	1.5	V		
Gate Non-Trigger Voltage		V_{GD}	V _D = Rated, Tc = 125°C		0.2	_	_	V		
Holding Current		lΗ	V _D = 12V, I _{TM} = 1A		_	_	50	mA		
Thermal Resistance		R _{th (j-c)}	Junction to Case, AC		_	_	2.5	°C/W		
Critical Rate of Rise of Off-State Voltage		SM16GZ47 SM16JZ47		dv / dt	V _{DRM} = Rated, T _i = 125°C		_	300	_	- V / μs
	SM16GZ47 SM16JZ47		uv / ut	Exponential Rise		_	200	_	ν / μ5	
Critical Rate of Rise of		SM16GZ47 SM16JZ47		(dv / dt) c	V _{DRM} = 400V, T _i = 125°C		10	_	_	- V / µs
		SM16GZ47 SM16JZ47		(av / at) C	(di / dt) c = -8.	7A / ms	4		_	

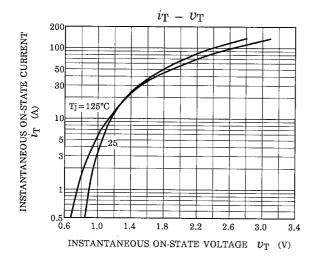
MARKING

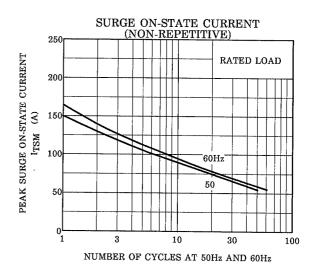


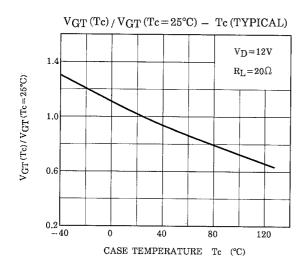
* NUMBER	SYMBOL		MARK	
* 1	Toshiba Product Mark		7	
* 2		SM16GZ47, SM16GZ47A	M16GZ47	
2	TYPE	SM16JZ47, SM16JZ47A	M16JZ47	
* 3		SM16GZ47A, SM16JZ47A	А	
* 4	Lot Number Month (Starting from Alphabet A) Year Last Decimal Digit of the Current Year		Example 8A : January 1998 8B : February 1998 8L : December 1998	

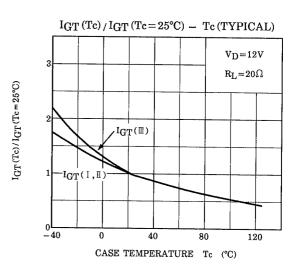


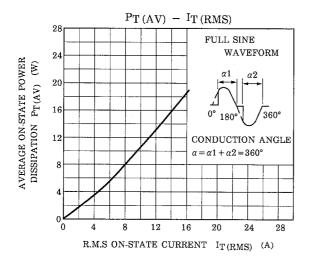


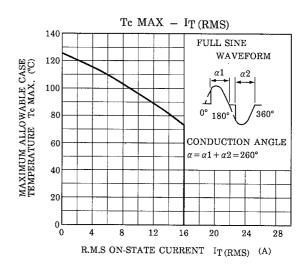


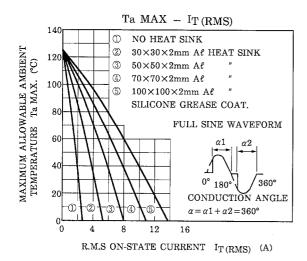


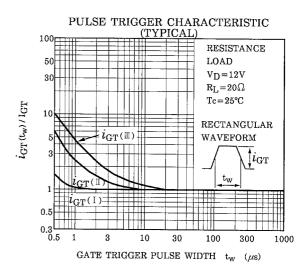


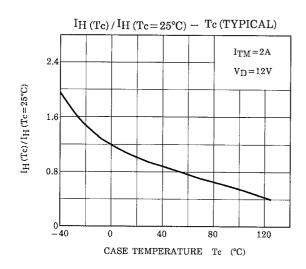


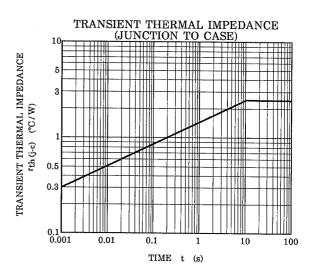












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