

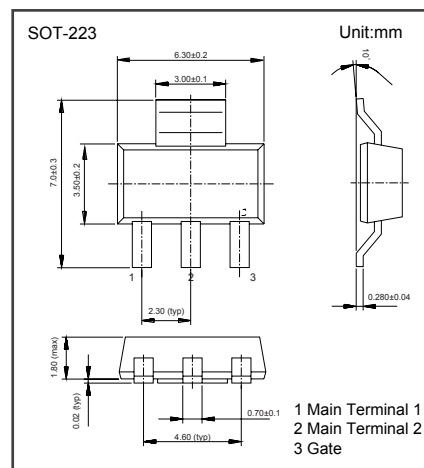
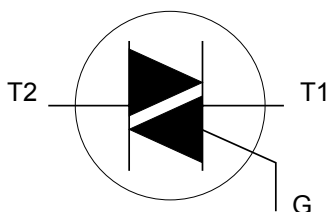
4 Quadrants Sensitive TRIAC

Z0107MN / Z0107NN



■ Features

- Repetitive Peak Off-State Voltage : 600V/800V
- R.M.S On-State Current ($I_{T(RMS)} = 1A$)
- Sensitive Gate Trigger Current
 - 5[mA] of IGT at I, II and III Quadrants.
 - 12[mA] of IGT at IV Quadrant.



■ Absolute Maximum Ratings $T_a = 25^{\circ}\text{C}$

Parameter	Symbol	Z0107MN	Z0107NN	Unit
Peak Repetitive Forward and Reverse Blocking Voltages	V _{DRM} V _{RRM}	600	800	V
Average On-State Current @ Full sine wave, T _c = 72 °C	I _{T(AV)}	0.9		A
RMS on-state Current @ Full sine wave, T _c = 72 °C	I _{T(RMS)}	1		
Surge On-State Current @ 1/2 cycle, 50Hz/60Hz Sine Wave Non-Repetitive	I _{TSM}	12/13		
Circuit Fusing Considerations @ t = 10ms	I ² t	0.7		A ² s
Forward Peak Gate Current @ T _J = 125 °C, pulse width ≤ 20us	I _{FGM}	0.5		A
Peak Gate Voltage @ T _J = 125 °C, pulse width ≤ 20us	V _{GM}	6		V
Peak Gate Power @ T _J = 125 °C	P _{GM}	2		W
Average Gate Power @ T _J = 125 °C, over any 20ms	P _{G(AV)}	0.2		
Thermal Resistance Junction to Ambient	R _{thJA}	150		K/W
Thermal Resistance Junction to Case	R _{thJC}	48		
junction Temperature	T _J	125		°C
Storage Temperature range	T _{stg}	-40 to 150		

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■ Electrical Characteristics (Ta = 25°C, unless otherwise noted.)

Parameter	Symbol	Test Conditions		Min	Typ.	Max	Unit
Repetitive Peak off-state Voltages	V _{DRM} V _{RRM}	I _D =I _R =100 uA	Z0107MN	600			V
			Z0107NN	800			
Repetitive Peak Off-State Current	I _{DRM}	V _D =V _{DRM}	T _J =25℃			50	uA
			T _J =125℃			5	mA
Repetitive Peak Reverse Current	I _{RRM}		T _J =25℃			50	uA
			T _J =125℃			5	mA
On-state Voltage	V _{TM}	I _T =1.4A, I _G =20mA				1.6	V
Non-Trigger Gate Voltage	V _{GD}	V _D =12V, R _L =330Ω, T _J =125℃ (Note.1)		0.2			
Gate Trigger Voltage	V _{GT}	V _D =12V, R _L =330Ω	1+, 1-, 3-			1.5	
			3+			2	
Gate Trigger Current	I _{GT}	V _D =12V, R _L =330Ω	1+, 1-, 3-			5	mA
			3+			12	
Holding Current	I _H	I _T =200mA				5	
Critical Rate of rise of off-state Voltage	dv /dt	V _D = 2/3 V _{DRM} , T _J =125℃		10			V/us

Note.1: Pulse Width ≤ 1.0ms, Duty Cycle ≤ 1%

■ Typical Characteristics

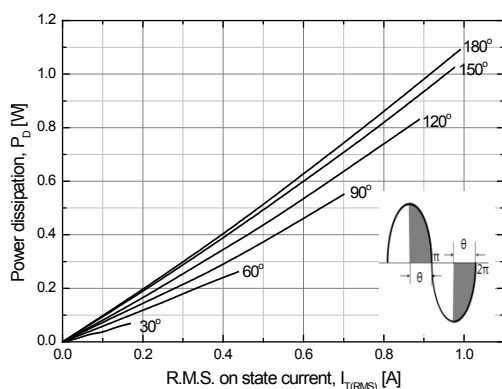


Fig 1. R.M.S. current vs. Power dissipation

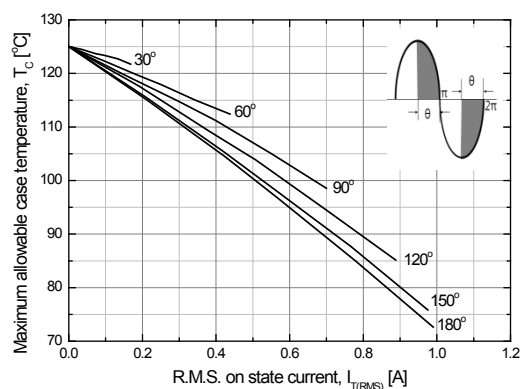


Fig 2. R.M.S. current vs. Case temperature

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■ Typical Characteristics

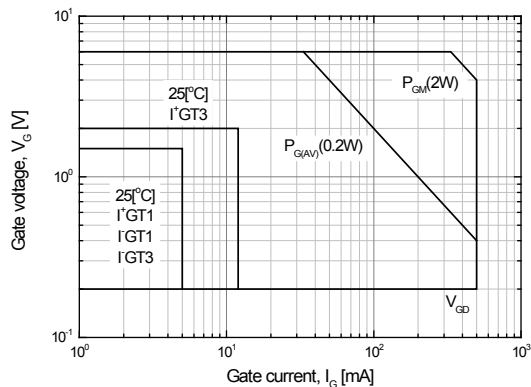


Fig 3. Gate power characteristics

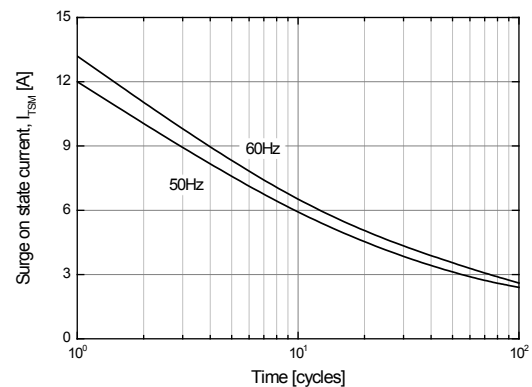


Fig 4. Surge on state current rating
(Non-repetitive)

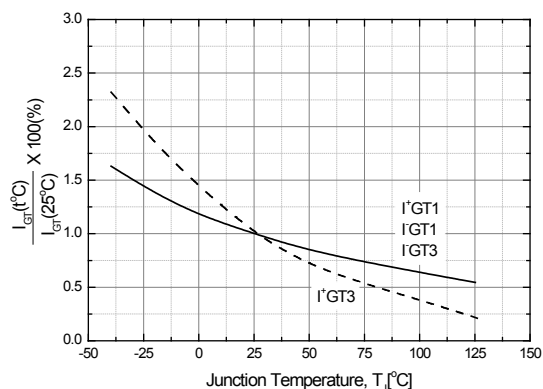


Fig 5. Gate trigger current vs.
junction temperature

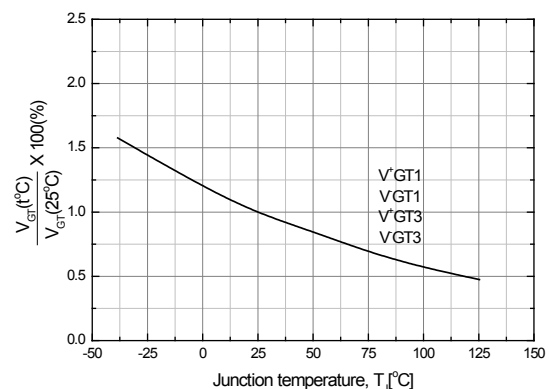


Fig 6. Gate trigger voltage vs.
junction temperature

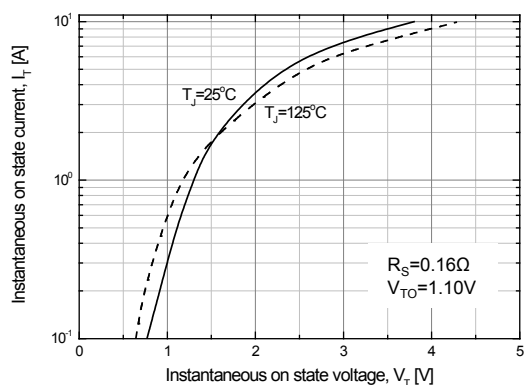


Fig 7. Instantaneous on state current vs.
Instantaneous on state voltage

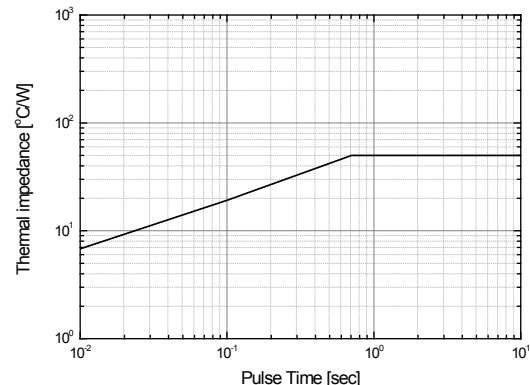


Fig 8. Thermal Impedance vs. pulse time