



Sanken General Purpose Discrete Devices

Triacs and Thyristors

SANKEN Electric Co., LTD.
Transistors Engineering Group
Power Discrete Device Division

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TMA/TMB/TMC Series

- Guaranteed 150°C T_J(max)
- Guaranteed 800 V breakdown voltage
- Achieve high quality, high failure resistance, and high fault tolerance
- Competitive pricing

Features

Guaranteed 150°C junction temperature

- Expanded thermal design margin and easier thermal solution design
- Enables heatsink size reduction of approximately 20%

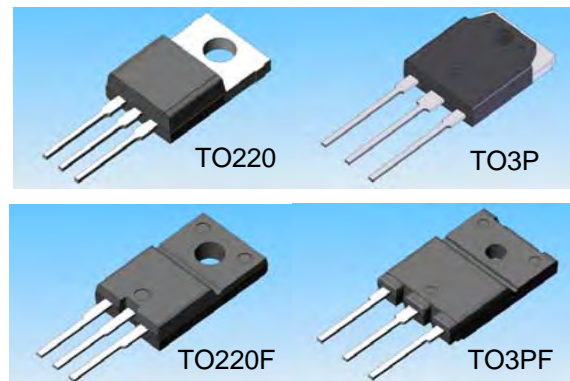
600 V and 800 V withstand voltage (V_{DRM}) options

- Product lineup includes 100 V and 200 V models, covering the world's various power supply voltages

High dv/dt resistance of 100 V/μs (min.)

- Higher stability against malfunction

New Triacs





TMA/TMB/TMC Series

Sanken Triac Design Superiority

Industry-standard package options

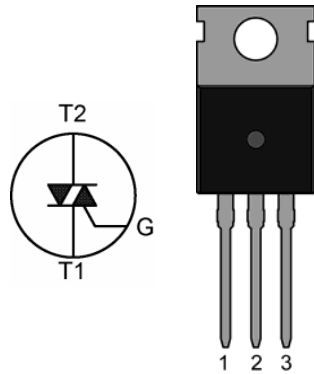
- Various choices for design requirements
- Compatible with competitor packages
- UL-certified products options

High thermal dissipation and high reliability structure

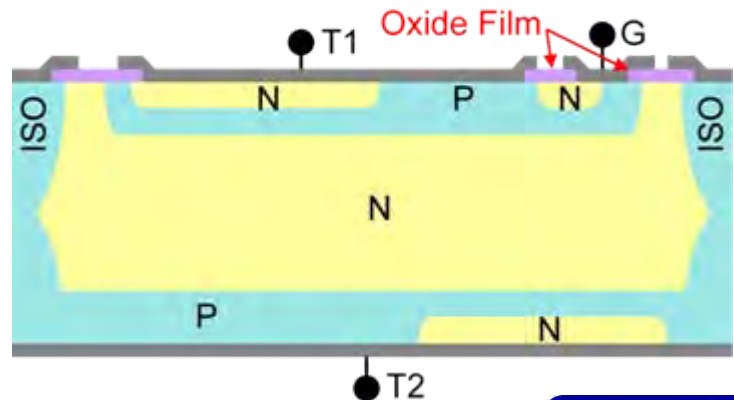
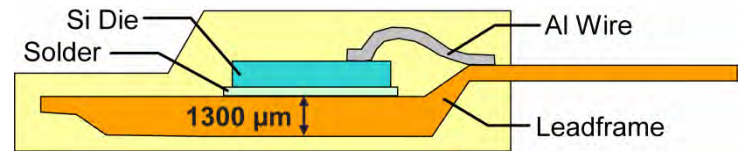
- Low thermal resistance with thick leadframe
- Expanded thermal design margin and easier heatsinking
- Easy to control assembly into customer product
- Reduces customer manufacturing costs

New technology die (Planer structure)

- Stable characteristics performance
- Lower current leakage than mesa structure
- No glass passivation layer
- High reliability achieved by planer structure
- Low on-state voltage achieved by thinner die technology



Terminal List Table		
Number	Name	Function
1	T1	Main terminal, gate referenced
2	T2	Main terminal connect to signal side
3	G	Gate control





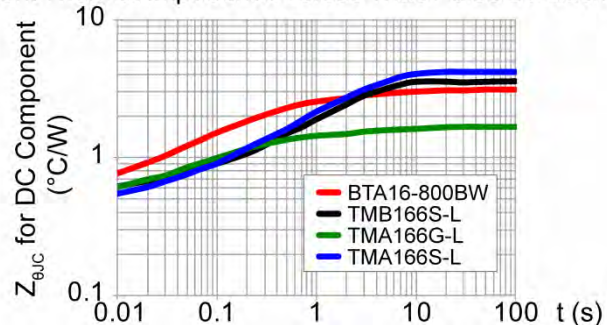
TMA/TMB/TMC Series

Excellent Characteristics Performance

Low transient thermal impedance

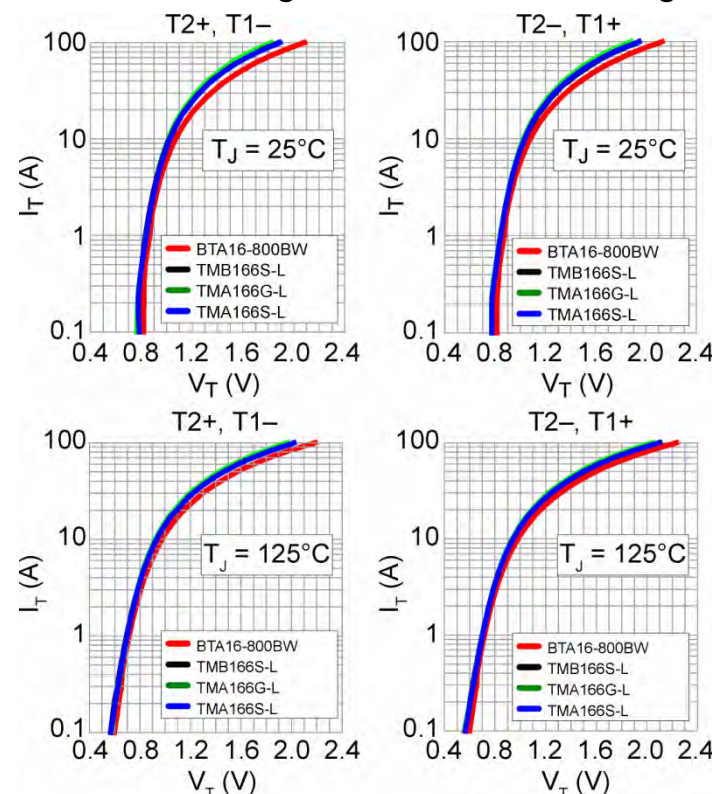
- Inhibits temperature spikes
- >Product life advantage: Blocks inrush current

Transient Thermal Impedance versus Triac Pulse Duration for DC



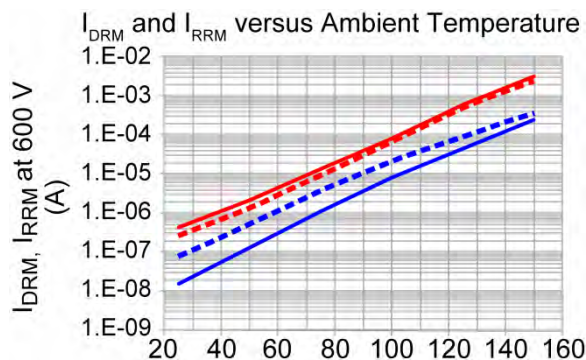
Low on-state voltage

- Thinner die technology allows low on-state voltage
- Inhibits temperature increase over entire current range
- >Product life advantage: Easier thermal design



Low current leakage

- Planer structure for low leakage current
- >Product life advantage: Lower standby power, higher reliability





Triac Lineup

Series	Package	V_{DRM}		400 V	UL	600V	UL	800 V	UL	I_{GT} (mA)	$T_J(max)$ (°C)
		$I_{T(RMS)}$									
TMA	TO220F2	3A		-	-	TMA36H-L	x	-	-	20	125
		5A		-	-	TMA56H-L	x	-	-	20	125
		8A		-	-	TMA86H-L	x	-	-	30	125
		10A		-	-	TMA106H-L	x	-	-	30	125
		12A		-	-	TMA126H-L	x	-	-	30	125
		16A		-	-	TMA166H-L	x	-	-	30	125
	TO220	3A		-	-	TMA36G-L	-	-	-	20	125
		5A		-	-	TMA56G-L	-	-	-	20	125
		8A		-	-	TMA86G-L	-	-	-	30	125
		10A		-	-	TMA106G-L	-	-	-	30	125
		12A		-	-	TMA126G-L	-	-	-	30	125
		16A		-	-	TMA166G-L	-	-	-	30	125
	TO3PF	16A		TMA164B-L	-	TMA166B-L	-	-	-	30	125
		16A		TMA164B(I)	x	TMA166B(I)	x	-	-	30	125
		25A		TMA254B-L	-	TMA256B-L	-	-	-	30	125
		25A		TMA254B(I)	x	TMA256B(I)	x	-	-	30	125
TO3P	16A		TMA164P-L	-	TMA166P-L	-	-	-	30	125	
TMB	TO220F2	16A		-	-	TMB166H-L	x	-	-	30	150
		20A		-	-	TMB206H-L	x	-	-	30	150
		25A		-	-	TMB256H-L	x	-	-	30	150
	TO220	16A		-	-	TMB166G-L	-	-	-	30	150
		20A		-	-	TMB206G-L	-	-	-	30	150
TMC	TO220F2	10A		-	-	-	-	TMC108H-L	x	30	125

UL: UL Approved type

Blue: New





TF/TFA Series

Guaranteed both 150°C T_J(max) and 800 V withstand voltage —the first in the industry

Guaranteed 150°C junction temperature

- Expanded thermal design margin and easier thermal solution design
- Enables heatsink size reduction of approximately 20%

700 V and 800 V withstand voltage (V_{DRM}/V_{RRM}) lineup

- Lineup includes 100 V and 200 V products covering the world's various power supply voltages

High dv/dt resistance of 300 V/μs (typ.)

- Higher stability against malfunction

Lineup

Series	PKG	V _{DRM}		600 V		700 V		800 V		I _{GT} (mA)	T _J (max) (°C)
		I _T (RMS)	UL	UL	UL	UL	UL				
TF	TO220F2	3A	x	-	-	-	-	0.1	110		
	TO220	3A	-	TF361G-A	-	-	-	0.1	110		
TFA	TO220F1	3A	-	-	TFA37S	-	TFA38S	-	15	150	
		3A	-	-	TFA37(I)	x	TFA38(I)	x	15	150	
		5A	-	-	TFA57S	-	TFA58S	-	15	150	
		5A	-	-	TFA57(I)	x	TFA58(I)	x	15	150	
		8A	-	-	TFA87S	-	TFA88S	-	15	150	
		8A	-	-	TFA87(I)	x	TFA88(I)	x	15	150	
		10A	-	-	TFA107S	-	TFA108S	-	15	150	
		10A	-	-	TFA107(I)	x	TFA108(I)	x	15	150	

UL: UL Approved type

New Thyristors





Package Outlines

Non-Insulated

Insulated

TO 220	TO 3P	TO 220F1	TO 220F2	TO 3PF



Leadframe plating Pb-free.
Device meets RoHS requirements.