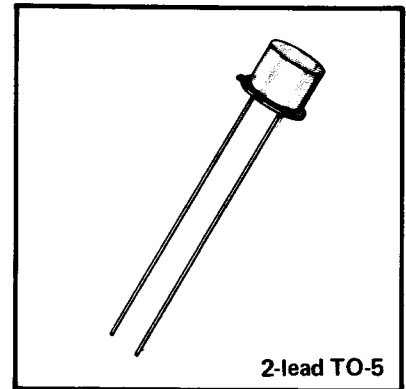


# BIDIRECTIONAL TRIODE THYRISTOR (TRIAC)



## DESIGN FEATURES

- Gate sensitivity 50 mA
- Operating temperature to +100°C
- 60 A surge rating

Transitron's hermetically sealed BTD03 series Triacs are ideally suited for those AC switching applications requiring excellent performance and optimum economy. Applications include speed and temperature controllers, lamp dimmers and many relay-replacement functions.

## REPETITIVE OFF-STATE VOLTAGE ( $V_{DRM}$ )

Symbol	BTD 0310	BTD 0320	BTD 0330	BTD 0340	BTD 0350	BTD 0360	Test Conditions
$V_{DRM}$ - VOLTS	100	200	300	400	500	600	$T_C = 100^\circ\text{C}$

SEE PAGE 1-16 FOR EUROPEAN PRO-ELECTRON TYPE NUMBER CROSS REFERENCE.

## ABSOLUTE MAXIMUM RATINGS @ $T_C = 80^\circ\text{C}$

Definitions	Symbol	Limits
RMS On-State Current	$I_T(\text{RMS})$	6 A
Peak One-Cycle Surge Current (60 Hz)	$I_{TSM}$	60 A
Peak Gate Power	PGM	5 W
Average Gate Power	PG(AV)	250 mW
Operating Temperature Range	$T_{op}$	-65 to +100°C
Storage Temperature Range	$T_{stg}$	-65 to +125°C

6 AMP TRIAC

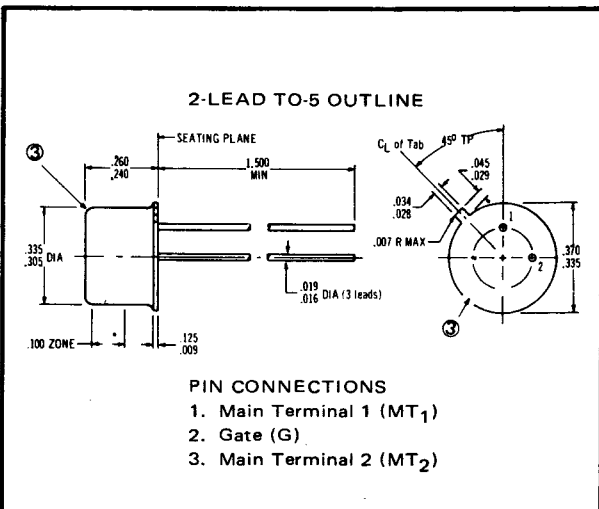
ELECTRICAL CHARACTERISTICS

PARAMETERS			LIMITS		TEST CONDITIONS			
Symbol	Units	Definitions	Min.	Max.	T °C	RGK ohms	VAA volts	Other Conditions
V <sub>TM</sub>	Volts	Max. On-State Voltage	—	1.9	25	—	—	I <sub>TM</sub> = 6 A peak
I <sub>DRM</sub>	mA	Rep. Peak Off-State Current	—	1.0 5.0	25 100	∞ ∞	V <sub>DRM</sub> V <sub>DRM</sub>	
I <sub>GT</sub>	mA	Gate Trigger Current	—	50	25	∞	12	All 4 quadrants
V <sub>GT</sub>	Volts	Gate Trigger Voltage	—	3.0	25	∞	12	All 4 quadrants
I <sub>H</sub>	mA	Holding Current	—	50	25	∞	12	
dv/dt	V/μs	Rate of rise of V <sub>DRM</sub>	15*	—	25	∞	V <sub>DRM</sub>	

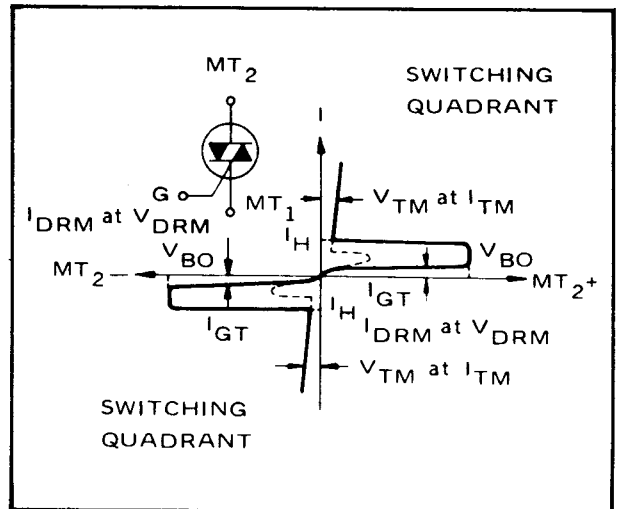
\*Typical

NOTE  
 FOR CHARACTERISTIC CURVES FOR THIS FAMILY REFER  
 TO THE END OF THIS GROUP OF SPECIFICATIONS.

PACKAGING DATA

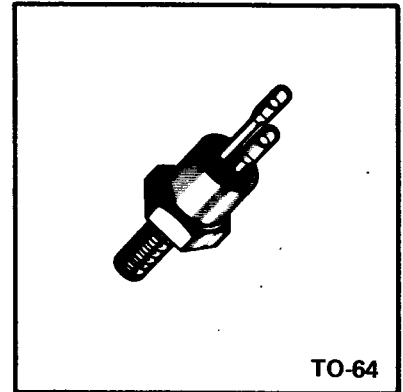


V-I CHARACTERISTICS



400 HZ, HIGH RELIABILITY TRIAC

# BIDIRECTIONAL TRIODE THYRISTOR (TRIAC)



**DESIGN FEATURES**

- Hard-bonded construction
- Gate sensitivity 50 mA
- Operating temperature to +125°C
- Operation to 400 Hz

Transitron's high-reliability Triac's are ideally suited for the most stringent 60-400 Hz AC switching requirements. Applications include temperature and speed control and many types of relay-replacement functions. Designed to meet the requirements of MIL-S-19500, the BTN series provides new flexibility in advanced aircraft and marine system design.

**REPETITIVE OFF-STATE VOLTAGE (V<sub>DRM</sub>)**

Symbol	BTN 0110	BTN 0120	BTN 0140	Test Conditions
V <sub>DRM</sub> – VOLTS	100	200	400	T <sub>C</sub> = 125°C

**ABSOLUTE MAXIMUM RATINGS @ T<sub>C</sub> = 80°C**

Definitions	Symbol	Limits
RMS On-State Current	I <sub>T</sub> (RMS)	6 A
Peak One-Cycle Surge Current (60 Hz)	I <sub>TSM</sub>	60 A
Peak Gate Power	P <sub>GM</sub>	5 W
Average Gate Power	P <sub>G(AV)</sub>	250 mW
Operating Temperature Range	T <sub>op</sub>	-65 to +125°C
Storage Temperature Range	T <sub>stg</sub>	-65 to +150°C

400 HZ, HIGH RELIABILITY TRIAC

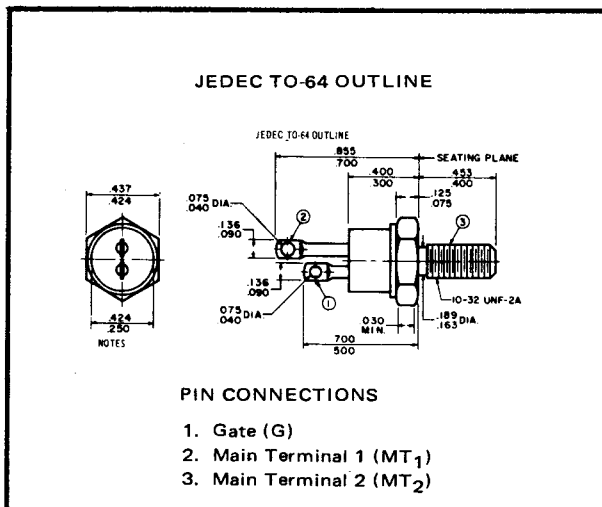
ELECTRICAL CHARACTERISTICS

PARAMETERS			LIMITS		TEST CONDITIONS			
Symbol	Units	Definitions	Min.	Max.	T °C	RGK ohms	VAA volts	Other Conditions
$V_{TM}$	Volts	Max. On-State Voltage	—	1.9	25	—	—	$I_{TM} = 10$ A peak
$I_{DRM}$	mA	Rep. Peak Off-State Current	—	5.0	125	$\infty$	$V_{DRM}$	
$I_{GT}$	mA	Gate Trigger Current	—	50	25	$\infty$	12	All 4 quadrants
$V_{GT}$	Volts	Gate Trigger Voltage	—	3.0	25	$\infty$	12	All 4 quadrants
$I_H$	mA	Holding Current	—	50	25	$\infty$	12	
dv/dt	V/ $\mu$ s	Rate of rise of $V_{DRM}$	100*	—	125	$\infty$	$V_{DRM}$	

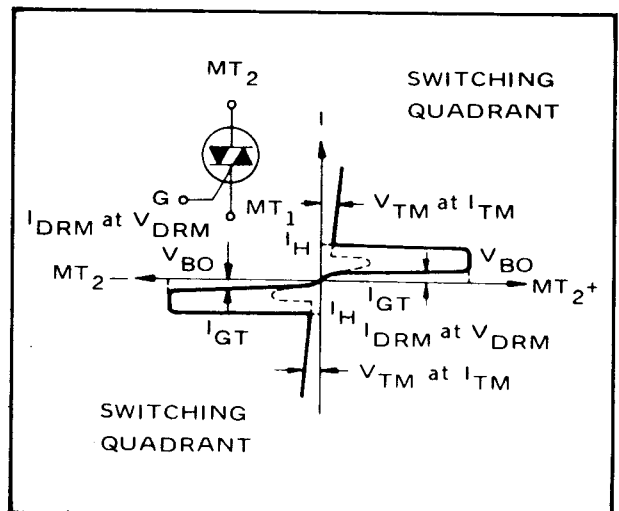
\*Typical

NOTE  
FOR CHARACTERISTIC CURVES FOR THIS FAMILY REFER TO THE END OF THIS GROUP OF SPECIFICATIONS.

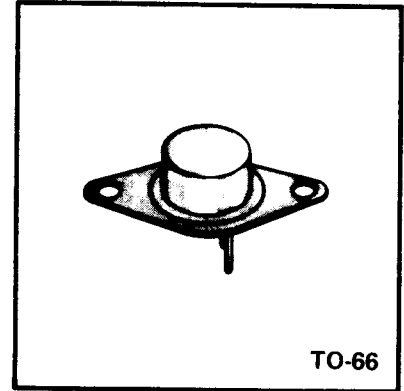
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V-I CHARACTERISTICS



# BIDIRECTIONAL TRIODE THYRISTOR (TRIAC)



## DESIGN FEATURES

- Gate sensitivity 100 mA
- Blocking voltage to 600 V
- Operating temperature to +100°C

Transitron's hermetically sealed BTR03 series Triacs are ideally suited for those AC switching applications requiring excellent performance and optimum economy. Applications include speed and temperature controllers, lamp dimmers and many relay-replacement functions.

## REPETITIVE OFF-STATE VOLTAGE ( $V_{DRM}$ )

Symbol	BTR 0405	BTR 0410	BTR 0420	BTR 0430	BTR 0440	BTR 0450	BTR 0460	Test Conditions
$V_{DRM}$ - VOLTS	50	100	200	300	400	500	600	$T_C = 100^\circ\text{C}$

SEE PAGE 1-16 FOR EUROPEAN PRO-ELECTRON TYPE NUMBER CROSS REFERENCE.

## ABSOLUTE MAXIMUM RATINGS @ $T_C = 80^\circ\text{C}$

Definitions	Symbol	Limits
RMS On-State Current	$I_T(\text{RMS})$	10 A
Peak One-Cycle Surge Current (60 Hz)	$I_{TSM}$	100 A
Peak Gate Power	PGM	5 W
Average Gate Power	PG(AV)	250 mW
Operating Temperature Range	$T_{op}$	-65 to +100°C
Storage Temperature Range	$T_{stg}$	-65 to +125°C

10 AMP TRIAC

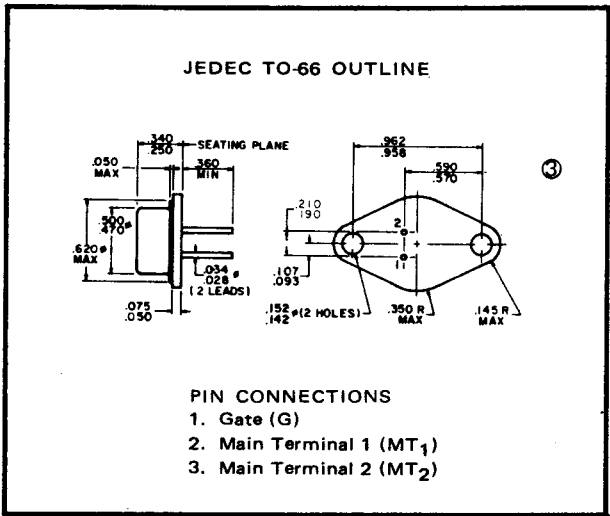
ELECTRICAL CHARACTERISTICS

PARAMETERS			LIMITS		TEST CONDITIONS			
Symbol	Units	Definitions	Min.	Max.	T °C	RGK ohms	VAA volts	Other Conditions
$V_{TM}$	Volts	Max. On-State Voltage	—	1.5	25	—	—	$I_{TM} = 10 \text{ A peak}$
$I_{DRM}$	mA	Rep. Peak Off-State Current	—	1.0 5.0	25 100	$\infty$ $\infty$	$V_{DRM}$ $V_{DRM}$	
$I_{GT}$	mA	Gate Trigger Current	—	100	25	$\infty$	12	All 4 quadrants
$V_{GT}$	Volts	Gate Trigger Voltage	—	3.0	25	$\infty$	12	All 4 quadrants
$I_H$	mA	Holding Current	—	50	25	$\infty$	12	
dv/dt	V/ $\mu$ s	Rate of rise of $V_{DRM}$	100*	—	25	$\infty$	$V_{DRM}$	

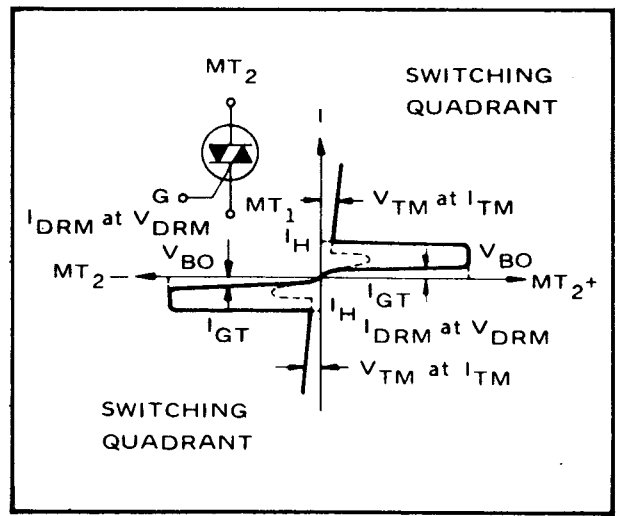
\*Typical

NOTE  
 FOR CHARACTERISTIC CURVES FOR THIS FAMILY REFER  
 TO THE END OF THIS GROUP OF SPECIFICATIONS.

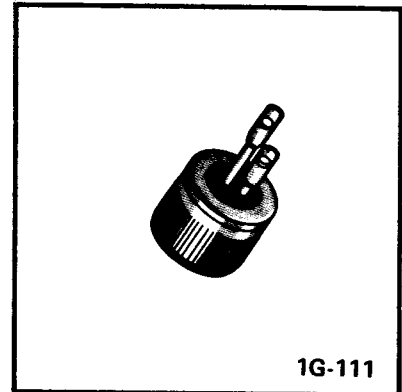
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V-I CHARACTERISTICS



# BIDIRECTIONAL TRIODE THYRISTOR (TRIAC)



## DESIGN FEATURES

- Gate sensitivity 100 mA
- Blocking voltage to 600 V
- $dv/dt$  typically 100 V/ $\mu$ s

Transitron's hermetically sealed BTS04 series Triacs are ideally suited for those AC switching applications requiring excellent performance and optimum economy. Applications include speed and temperature controllers, lamp dimmers and many relay-replacement functions.

## REPETITIVE OFF-STATE VOLTAGE ( $V_{DRM}$ )

Symbol	BTS 0405	BTS 0410	BTS 0420	BTS 0430	BTS 0440	BTS 0450	BTS 0460	Test Conditions
$V_{DRM}$ - VOLTS	50	100	200	300	400	500	600	$T_C = 100^\circ\text{C}$

SEE PAGE 1-16 FOR EUROPEAN PRO-ELECTRON TYPE NUMBER CROSS REFERENCE.

## ABSOLUTE MAXIMUM RATINGS @ $T_C = 80^\circ\text{C}$

Definitions	Symbol	Limits
RMS On-State Current	$I_T(\text{RMS})$	10 A
Peak One-Cycle Surge Current (60 Hz)	$I_{TSM}$	100 A
Peak Gate Power	PGM	5 W
Average Gate Power	$P_{G(AV)}$	250 mW
Operating Temperature Range	$T_{op}$	$-65$ to $+100^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	$-65$ to $+125^\circ\text{C}$

10 AMP TRIAC

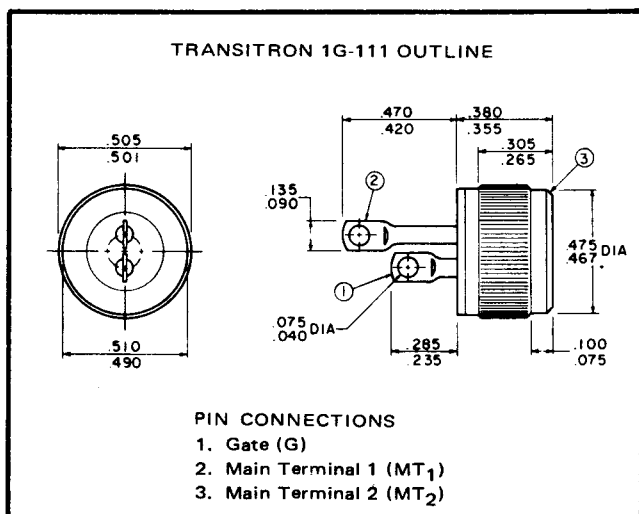
ELECTRICAL CHARACTERISTICS

PARAMETERS			LIMITS		TEST CONDITIONS			
Symbol	Units	Definitions	Min.	Max.	T °C	RGK ohms	VAA volts	Other Conditions
$V_{TM}$	Volts	Max. On-State Voltage	—	1.5	25	—	—	$I_{TM} = 10$ A peak
$I_{DRM}$	mA	Rep. Peak Off-State Current	—	5	100	$\infty$	$V_{DRM}$	
$I_{GT}$	mA	Gate Trigger Current	—	100	25	$\infty$	12	All 4 quadrants
$V_{GT}$	Volts	Gate Trigger Voltage	—	3	25	$\infty$	12	All 4 quadrants
$I_H$	mA	Holding Current	—	50	25	$\infty$	12	
dv/dt	V/ $\mu$ s	Rate of rise of $V_{DRM}$	100*	—	100	$\infty$	$V_{DRM}$	

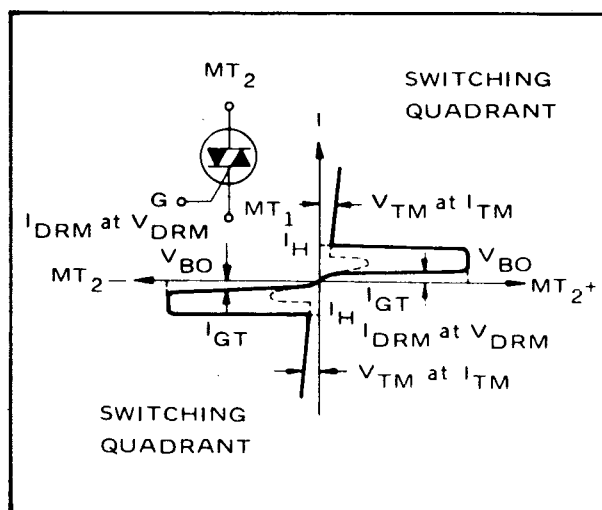
\*Typical

NOTE  
 FOR CHARACTERISTIC CURVES FOR THIS FAMILY REFER  
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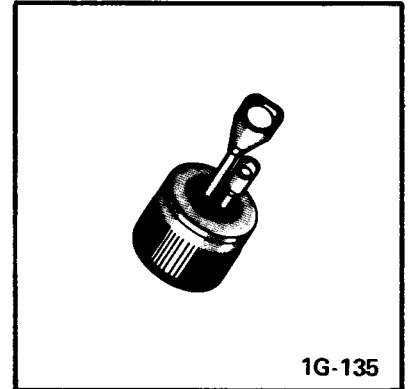


V-I CHARACTERISTICS





# BIDIRECTIONAL TRIODE THYRISTOR (TRIAC)



## DESIGN FEATURES

- Current range to 15 A RMS
- Operating temperature to +100°C
- 150 surge rating

Transitron's hermetically sealed BTS05 series Triacs are ideally suited for those AC switching applications requiring excellent performance and optimum economy. Applications include speed and temperature controllers, lamp dimmers and many relay-replacement functions.

## REPETITIVE OFF-STATE VOLTAGE ( $V_{DRM}$ )

Symbol	BTS 0505	BTS 0510	BTS 0520	BTS 0530	BTS 0540	BTS 0550	BTS 0560	Test Conditions
$V_{DRM}$ - VOLTS	50	100	200	300	400	500	600	$T_C = 100^\circ\text{C}$

SEE PAGE 1-16 FOR EUROPEAN PRO-ELECTRON TYPE NUMBER CROSS REFERENCE.

## ABSOLUTE MAXIMUM RATINGS @ $T_C = 80^\circ\text{C}$

Definitions	Symbol	Limits
RMS On-State Current	$I_T(\text{RMS})$	15 A
Peak One-Cycle Surge Current (60 Hz)	$I_{TSM}$	150 A
Peak Gate Power	$P_{GM}$	5 W
Average Gate Power	$P_{G(AV)}$	250 mW
Operating Temperature Range	$T_{op}$	-65 to +100°C
Storage Temperature Range	$T_{stg}$	-65 to +125°C

15 AMP TRIAC

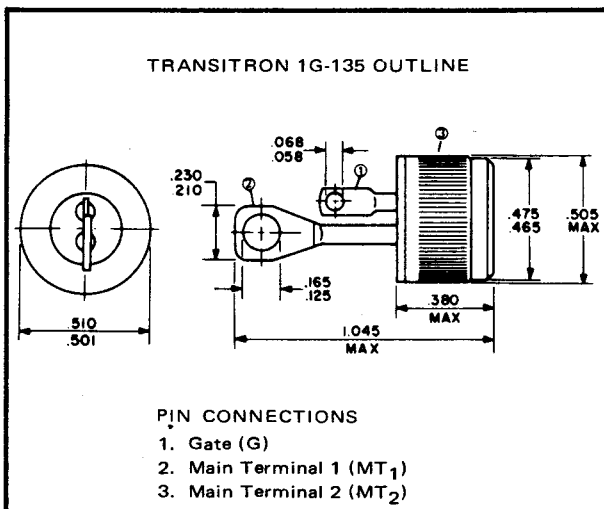
ELECTRICAL CHARACTERISTICS

PARAMETERS			LIMITS		TEST CONDITIONS			
Symbol	Units	Definitions	Min.	Max.	T °C	RGK ohms	VAA volts	Other Conditions
$V_{TM}$	Volts	Max. On-State Voltage	—	1.9	25	—	—	$I_{TM} = 15 \text{ A peak}$
$I_{DRM}$	mA	Rep. Peak Off-State Current	—	5.0	100	$\infty$	$V_{DRM}$	
$I_{GT}$	mA	Gate Trigger Current	—	100	25	$\infty$	12	All 4 quadrants
$V_{GT}$	Volts	Gate Trigger Voltage	—	3.0	25		12	All 4 quadrants
$I_H$	mA	Holding Current	—	50	25	$\infty$	12	
dv/dt	V/ $\mu$ s	Rate of rise of $V_{DRM}$	100*	—	100		$V_{DRM}$	

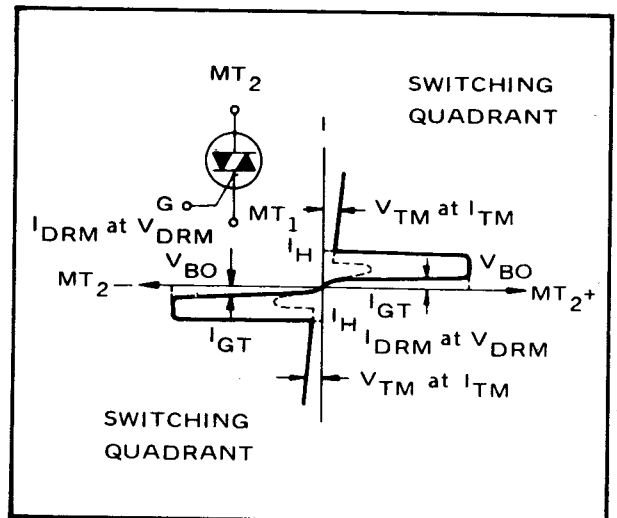
\*Typical

NOTE  
 FOR CHARACTERISTIC CURVES FOR THIS FAMILY REFER  
 TO THE END OF THIS GROUP OF SPECIFICATIONS.

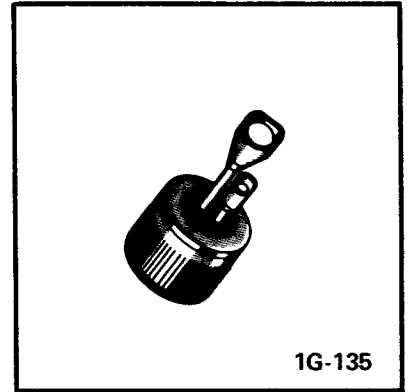
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CHARACTERISTICS



# BIDIRECTIONAL TRIODE THYRISTOR (TRIAC)



1G-135

## DESIGN FEATURES

- Gate sensitivity 100 mA
- Current range to 25 A RMS
- Operating temperature to +100°C

Transitron's hermetically sealed BTS06 series Triacs are ideally suited for those AC switching applications requiring excellent performance and optimum economy. Applications include speed and temperature controllers, lamp dimmers and many relay-replacement functions.

## REPETITIVE OFF-STATE VOLTAGE (V<sub>DRM</sub>)

Symbol	BTS 0605	BTS 0610	BTS 0620	BTS 0630	BTS 0640	BTS 0650	BTS 0660	Test Conditions
V <sub>DRM</sub> – VOLTS	50	100	200	300	400	500	600	T <sub>C</sub> = 100°C

## ABSOLUTE MAXIMUM RATINGS @ T<sub>C</sub> = 80°C

Definitions	Symbol	Limits
RMS On-State Current	I <sub>T(RMS)</sub>	25 A
Peak One-Cycle Surge Current (60 Hz)	I <sub>TSM</sub>	200 A
Peak Gate Power	P <sub>GM</sub>	5 W
Average Gate Power	P <sub>G(AV)</sub>	200 mW
Operating Temperature Range	T <sub>op</sub>	-65 to +100°C
Storage Temperature Range	T <sub>stg</sub>	-65 to +125°C

25 AMP TRIAC

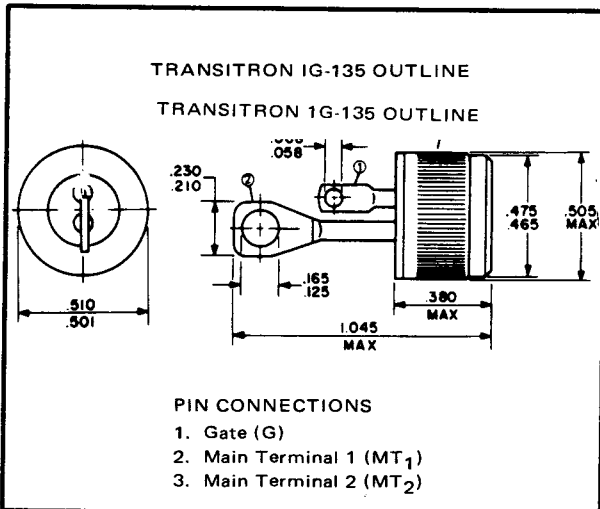
ELECTRICAL CHARACTERISTICS

PARAMETERS			LIMITS		TEST CONDITIONS			
Symbol	Units	Definitions	Min.	Max.	T °C	RGK ohms	VAA volts	Other Conditions
V <sub>TM</sub>	Volts	Max. On-State Voltage	—	1.9	25	—	—	I <sub>TM</sub> = 25 A peak
I <sub>DRM</sub>	mA	Rep. Peak Off-State Current	—	5.0	100	∞	V <sub>DRM</sub>	
I <sub>GT</sub>	mA	Gate Trigger Current	—	100	25	∞	12	All 4 quadrants
V <sub>GT</sub>	Volts	Gate Trigger Voltage	—	3.0	25	∞	12	All 4 quadrants
I <sub>H</sub>	mA	Holding Current	—	50	25	∞	12	
dv/dt	V/μs	Rate of rise of V <sub>DRM</sub>	100*	—	100	∞	V <sub>DRM</sub>	

\*Typical

NOTE  
 FOR CHARACTERISTIC CURVES FOR THIS FAMILY REFER  
 TO THE END OF THIS GROUP OF SPECIFICATIONS.

PACKAGING DATA



V-I CHARACTERISTICS

