MAXIMUM RATINGS (cont'd)

Transistor Dissipation:			
T_C up to 25°C	P_T	1	W
T_C above 25°C	P_T	See curve page 300	
T_A up to 25°C	P_T	0.3	W
T_A above 25°C	P_T	See curve page 300	
Temperature Range:			
Operating	$T(opr)$	−65 to 200	°C
Storage	T_{STG}	−65 to 175	°C
Lead-Soldering Temperature (10 s max)	T_L	265	°C

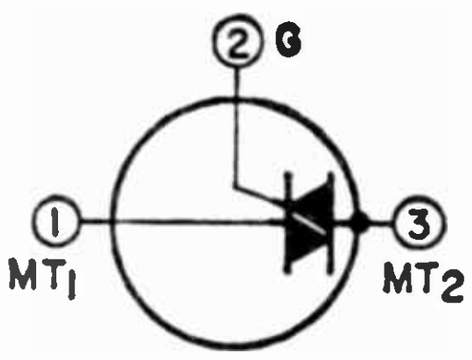
CHARACTERISTICS

Collector-to-Emitter Breakdown Voltage:			
I_C = 10 mA, I_B = 0, tp = 100 μs, df ≤ 0.02	$V_{(BR)CEO}$	16 min	V
I_C = 5 mA, V_{BE} = 0	$V_{(BR)CES}$	40 min	V
Emitter-to-Base Breakdown Voltage (I_E = −0.01 mA, I_C = 0)	$V_{(BR)EBO}$	5 min	V
Collector-Cutoff Current (V_{CB} = 20 V, V_{BE} = 0, I_E = 0)	I_{CBO}	25 max	nA
Static Forward-Current Transfer Ratio (I_C = 50 mA, V_{CE} = 1 V)	h_{FE}	20 min	
Magnitude of Small-Signal Forward-Current Transfer Ratio (I_C = 50 mA, V_{CE} = 1 V, f = 100 MHz)	$\|h_{fe}\|$	3 min	
Output Capacitance (V_{CB} = 5 V, I_E = 0, f = 0.1 to 1 MHz)	C_{obo}	3.5 max	pF
Power Output, Frequency Doubler (P_{ie} = 15 mW, f(in) = 86 MHz, f(out) = 172 MHz)	P_{oe}	70 min	mW
Efficiency, Frequency Doubler (f(in) = 86 MHz, f(out) = 172 MHz)	η	20 min	%

40525–40530

TRIACS

Si gate-controlled full-wave types used for switching from a blocking state to a conducting state for either polarity of applied voltage with positive or negative gate triggering. These types can be controlled with economical transistor circuits for use in low-power phase-control and load-switching applications. JEDEC TO-5 (modified), **Outline No.7.**



MAXIMUM RATINGS (For sinusoidal ac supply voltage at f = 50 and 60 Hz with resistive or inductive load)

	40525	40526	40527	40528	40529	40530	
V_{DROM}● (gate open):							
T_J = −40 to 90°C	100	200	400	—	—	—	V
T_J = −40 to 100°C	—	—	—	100	200	400	V
$I_{T(RMS)}$ (conduction angle = 360°)							
T_C = 60°C		2.5			—		A
T_C = 70°C	—	—	—		2.5		A
T_A = 25°C		0.35			0.4		A
I_{TSM} (1 cycle of principal voltage)				25			A
I_{GTM}■ (1 μs max)				0.5			A
P_{GM}■ (1 μs max)				10			W
$P_{G(AV)}$:							
T_A = 25°C				0.05			W
T_C = 60°C				0.15			W
T_{stg}●				−40 to 150			°C
T_C●				−40 to 100			°C

CHARACTERISTICS (At maximum electrical ratings at T_C = 25°C)

	40525	40526	40527	40528	40529	40530	
I_{DROM} (gate open, V_{DROM} = max rated value):							
T_J = 100°C	—	—	—	0.2 typ; 0.75 max			mA
T_J = 90°C	0.2 typ; 0.75 max			—	—	—	mA
v_T● (i_T = 10 A peak)	1.7 typ; 2.2 max						V(peak)
I_{HO}● (initial principal current = 150 mAdc)	2 typ; 5 max			6.5 typ; 15 max			mA(dc)

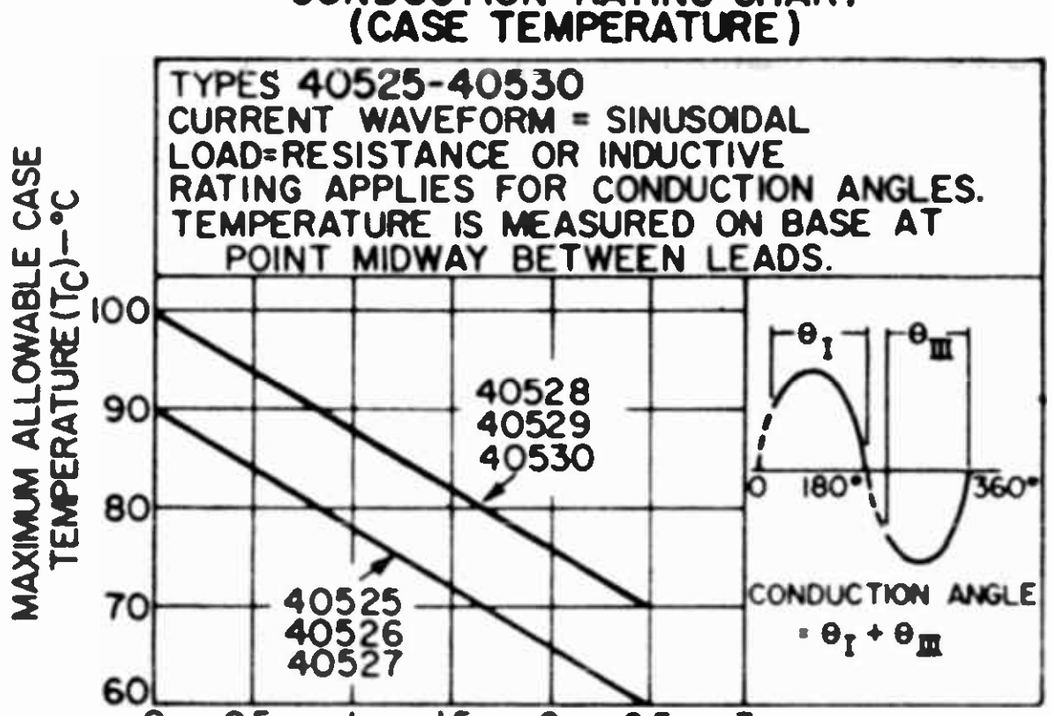
World Radio History

CHARACTERISTICS (cont'd)

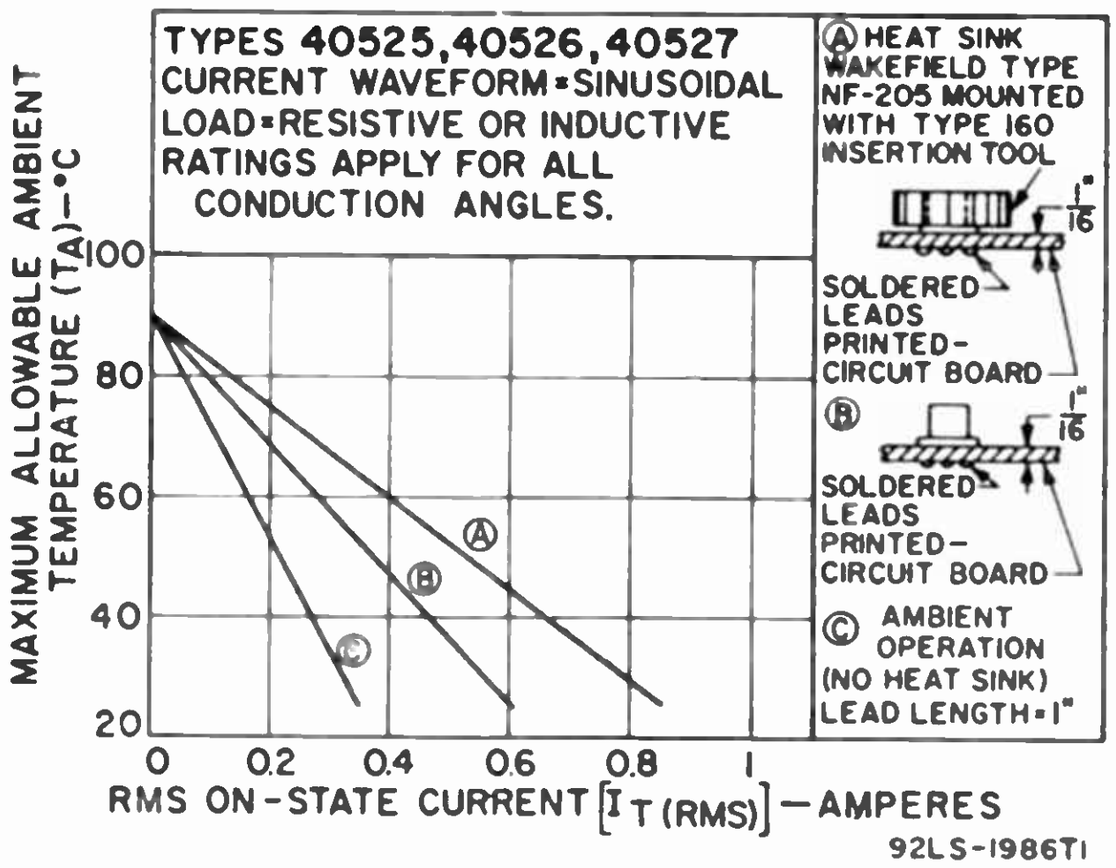
	40525	40526	40527	40528	40529	40530	
Critical dv/dt● ($v_D = V_{DROM}$, exponential voltage rise, gate open):							
T_C = 100°C	—	—	—	10			V/μs
T_C = 90°C	5			—	—	—	V/μs
I_{GT}●■ (v_D = 6 Vdc, R_L = 39 Ω):							
I⁺ mode, V_{MT2} positive, V_G positive	1 typ; 3 max			3.5 typ; 10 max			mA (dc)
I⁻ mode, V_{MT2} positive, V_G negative	2 typ; 3 max			7 typ; 10 max			mA (dc)
III⁺ mode, V_{MT2} negative, V_G positive	2 typ; 3 max			7 typ; 10 max			mA (dc)
III⁻ mode, V_{MT2} negative, V_G negative	1 typ; 3 max			3.5 typ; 10 max			mA (dc)
V_{GT}●■:							
v_D = 6 Vdc, R_L = 39 Ω	1 typ; 2.2 max						V
$v_D = V_{DROM}$, R_L = 125 Ω, T_C = 100°C	—	—	—	0.15 min			V
$v_D = V_{DROM}$, R_L = 125 Ω, T_C = 90°C	0.15 min			—	—	—	V

● For either polarity of main-terminal 2 voltage (V_{MT2}) with reference to main terminal 1.
■ For either polarity of gate voltage (V_G) with reference to main terminal 1.

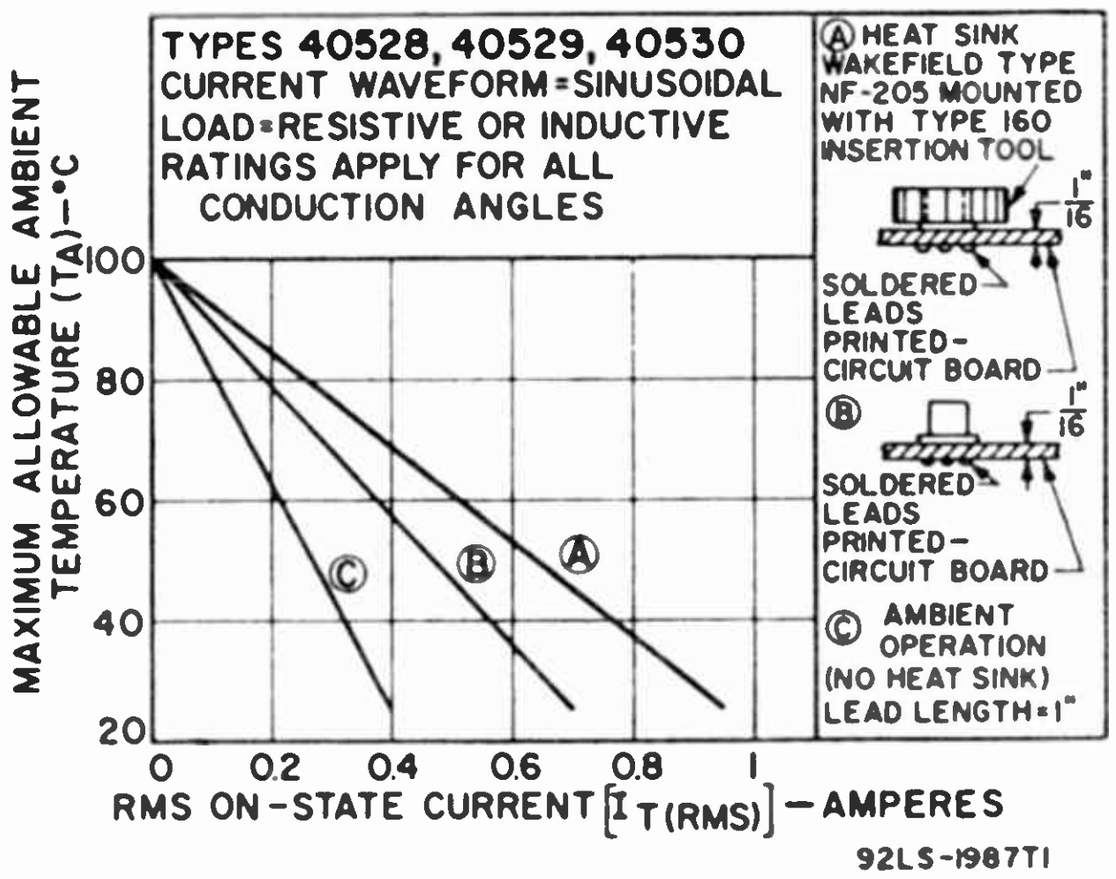
CONDUCTION RATING CHART
(CASE TEMPERATURE)



CONDUCTION RATING CHART (AMBIENT TEMPERATURE)

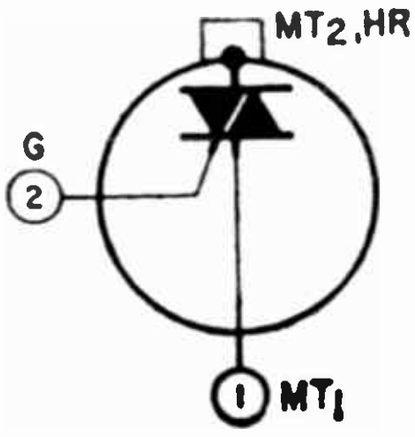


CONDUCTION RATING CHART (AMBIENT TEMPERATURE)



TRIACS

40531–40536



Si gated bidirectional types used for power-control and power-switching applications. JEDEC TO-5 (with heat radiator), Outline No.8. Types 40531, 40532, 40533, 40534, 40535, and 40536 are electrically identical with types 40525, 40526, 40527, 40528, 40529, and 40530, respectively.

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