Diac's: Silicon Bidirectional Trigger Diodes

TCE Type	MAXIMUM RATINGS		OPERATING CHARACTERISTICS			Figure No.
			Breakover/Switching			
	Total Power Dissipate. P_T W	Peak Pulse Current I_{PULSE} A	Voltage: In Both Directions V_{BR} V	Voltage Symmetry $V_{BR\pm}$ V	Current: In Both Directions I_{BR} uA	
SK3523		2.0	28-36	3.8 Max	200	R-001
SK4922		2.0		3 Max	50 Max	S-048
SK7901	0.150	2.0	28-36	2.5 Max	100	R-001
SK9082A	0.3	2.0	16-24	4 Max	100 Max	R-039

Bidirectional Diode-Thyristors (SIDAC)

TCE Type	MAXIMUM RATINGS				OPERATING CHARACTERISTICS							Figure No.
	Repetitive Peak Off-State Voltage V_{DRM} V	On-State RMS Current I_T A	Peak Non-Repet. Surge Current I_{TSM} A	Critical Rate of Rise of On-State Current dI/dt A/µs	Breakover Voltage V_{BO} V	Breakover Current I_{BO} mA	Holding Current I_H mA	Forward Voltage Drop V_T V	Turn-Off Time t_q µs	Switching Resistance R_S kΩ	Color of Marking Band	
SK4920	90	1	20	50	110-125	0.5 Max	50 Typ	1.5 Max	3.5 Typ	0.1 Min	Green	S-046
SK4921	90	1	20	50	104-118	0.5 Max	50 Typ	1.5 Max	3.5 Typ	0.1 Min	Blue	S-046
SK9843	90	1	20	50	85-113	0.5 Max	50 Typ	1.5 Max	3.5 Typ	0.1 Min	Orange	S-046
SK9844	45	1	20	50	55-65	0.5 Max	50 Typ	1.5 Max	3 Typ	0.1 Min	Gold	S-046
SK9846	45	1	20	50	45-60	0.5 Max	50 Typ	1.5 Max	3 Typ	0.1 Min	Red	S-046

Silicon Controlled Switches

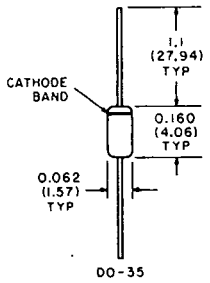
TCE Type	MAXIMUM RATINGS								OPERATING CHARACTERISTICS							Figure No.
	Total Power Dissipate. P_T mW	Collector Current: DC Continuous I_C mA	Collector Current: Peak Repetitive Surge $I_{CSRS/CRS}$ mA	Emitter Current: DC Continuous I_E mA	Emitter Current: Peak Repetitive Surge I_{ERS} A	Emitter Current: Peak Non-Repet. Surge I_{ES} A	Breakdown Voltages: Coll.-To Emitter (NPN/PNP) $BV_{CER/CEO}$ V	Breakdown Voltages: Coll To Base BV_{CBO} V	Forward Current Transfer Ratio h_{FE}	Forward Voltage Drop V_F V	Trigger Voltage V_{TRIG} V	Trigger Current I_{TRIG} µA	Holding Current I_H mA	Turn-On Time t_{on} µs	Turn-Off Time t_{off} µs	
SK4914	200	–10/25	–50/50	50/–50	0.1/–0.1	0.5/–0.5	–70 Min PNP	–70/70 Min	0.1/15 Min	1.9 Max NPN	1.1 Max NPN	150 Max NPN	4.0 Max NPN	1.5 Max NPN	8 Max NPN	S-043

Silicon Asymmetrical Switches (SAS)

TCE Type	MAXIMUM RATINGS			OPERATING CHARACTERISTICS						Figure No.
	Total Power Dissipate. P_T mW	DC Forward Current I_F mA	Peak Repetitive Forward Current $I_{FM(REP)}$ mA	Switching Voltages: 1 V_{S1} V	Switching Voltages: 2 V_{S2} V	Switching Current $I_{S1,2}$ µA	Forward On-State Voltages: 1 V_{F1} V	Forward On-State Voltages: 2 V_{F2} V	Turn-on Time t_{ON} µs	Turn-off Time t_{OFF} µs	
SK9125	350	200	500	14-18	7-9	80	7-10	1.6 Max	1	30	S-030

Dimensional Outlines and Terminal Diagrams

T-91-20



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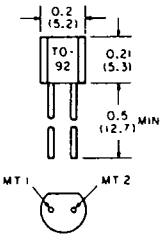

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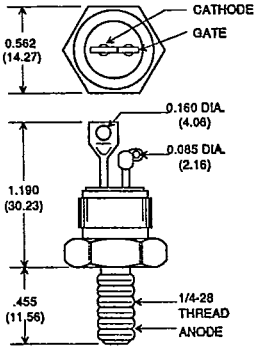

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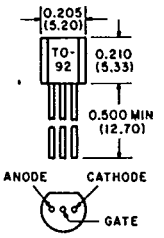

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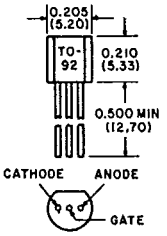

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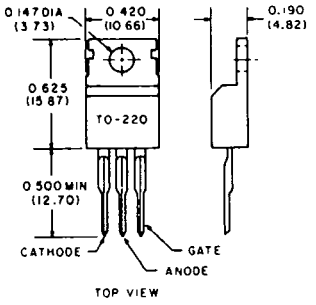

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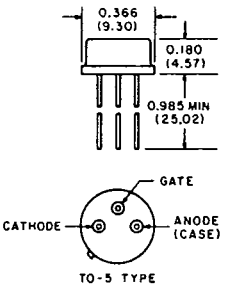

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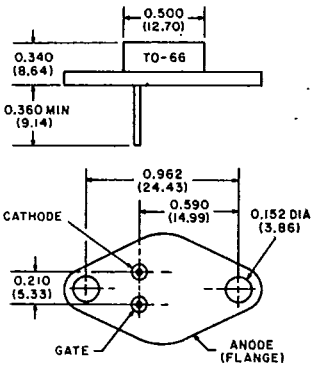

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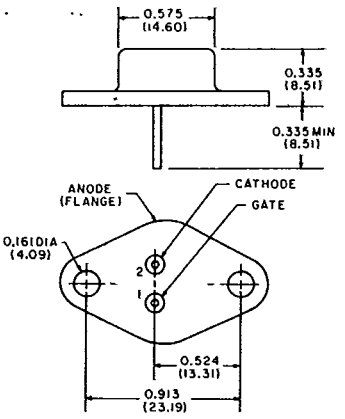

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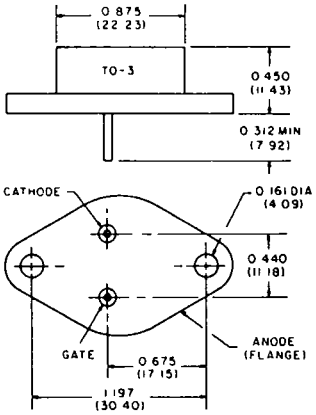

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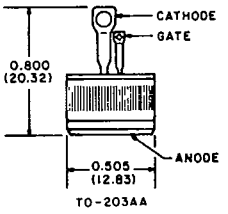

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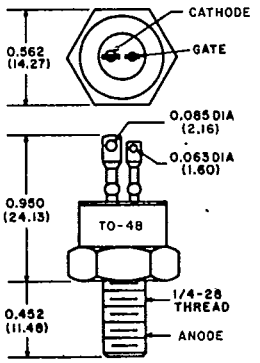

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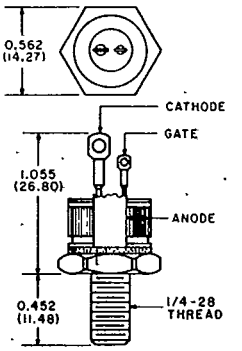

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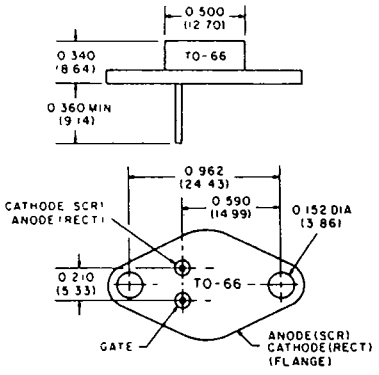

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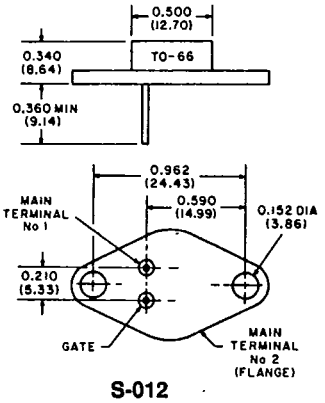

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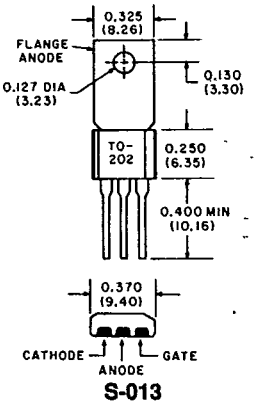

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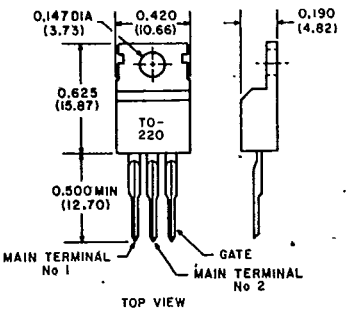


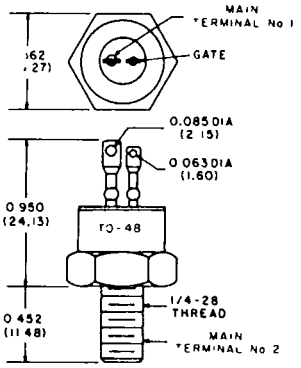
S-014

SK5538 and SK5545
Tab Isolated

Dimensions in inches (millimeters).
All dimensions are max. unless otherwise indicated

Dimensional Outlines and Terminal Diagrams

T-91-20



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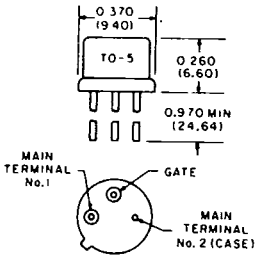

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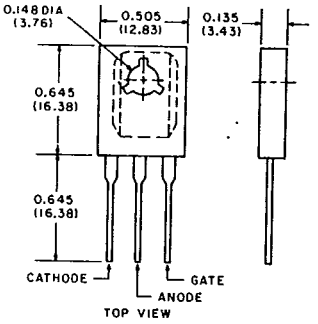

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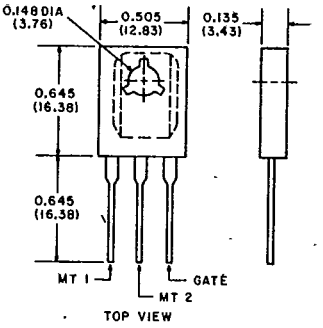

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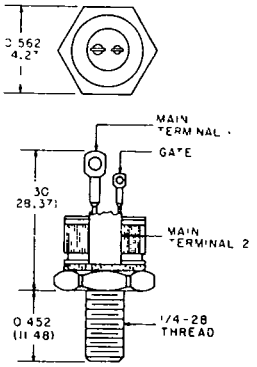

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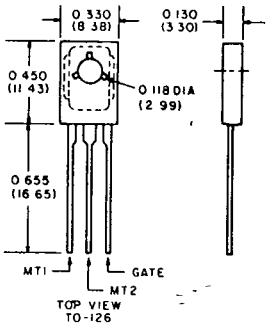

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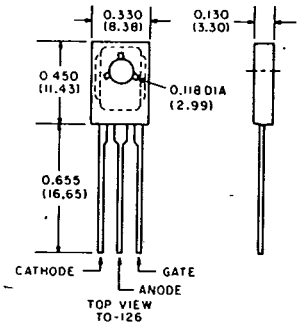

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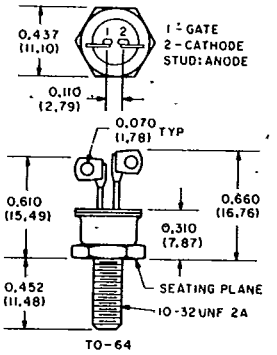

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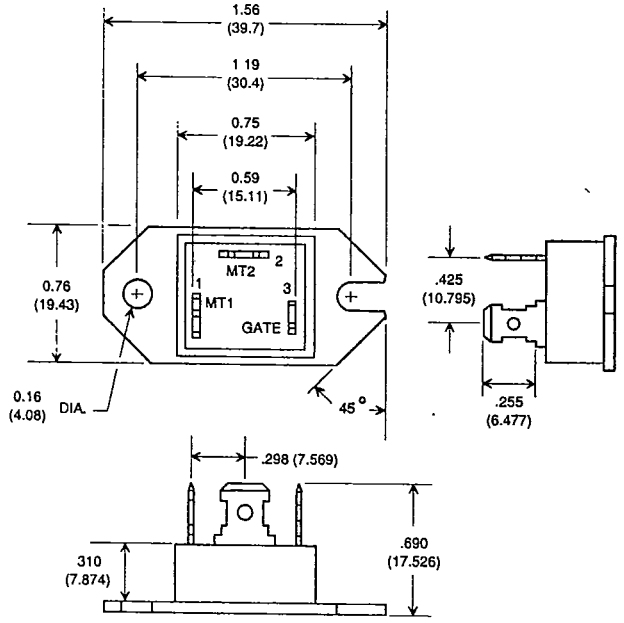

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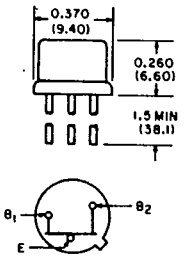

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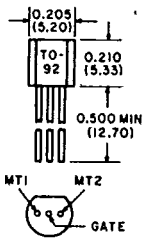

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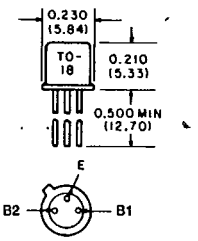

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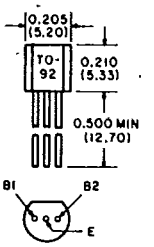
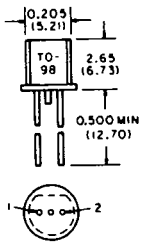


S-029

Dimensions in inches (millimeters).
All dimensions are max. unless otherwise indicated

Dimensional Outlines and Terminal Diagrams

T-91-20



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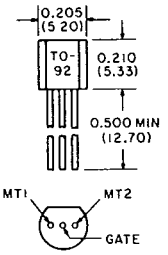

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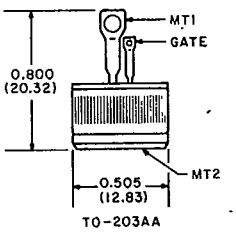

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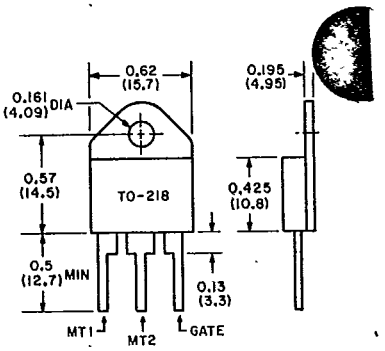

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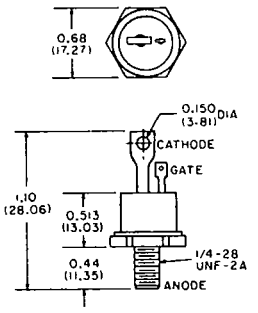

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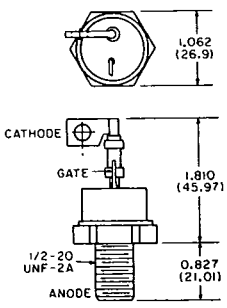

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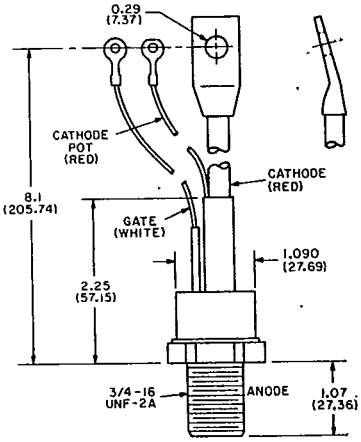

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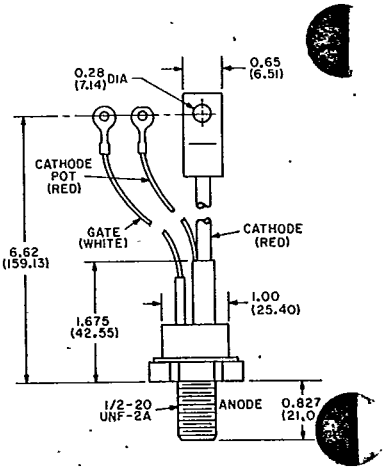

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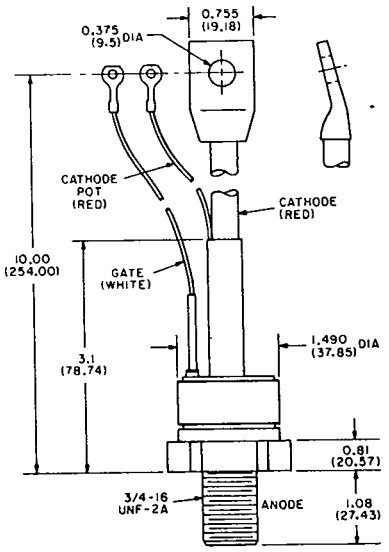

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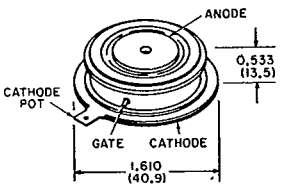

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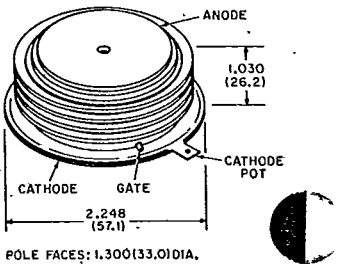

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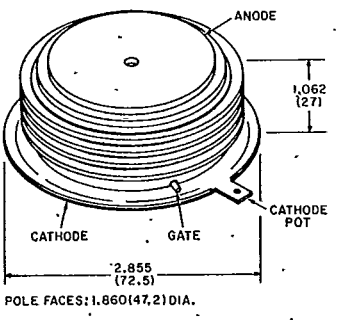
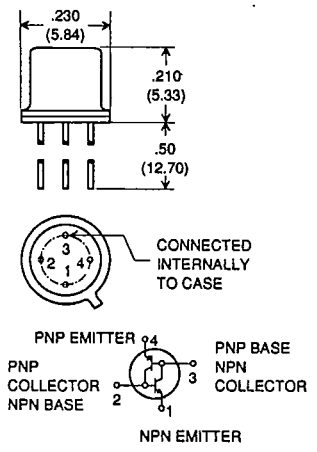


S-042

Dimensions in inches (millimeters).
All dimensions are max. unless otherwise indicated

Dimensional Outlines and Terminal Diagrams

T-91-20



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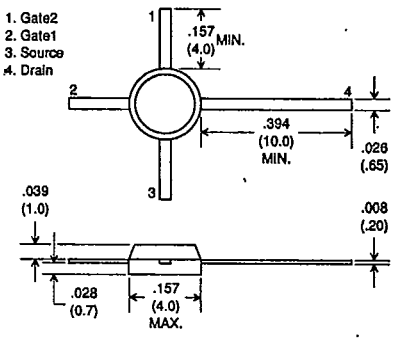

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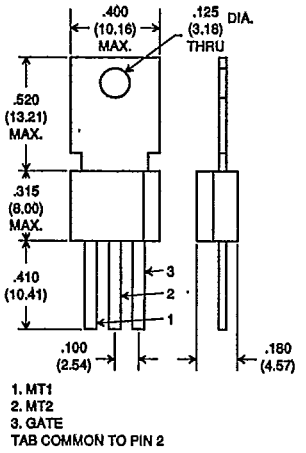

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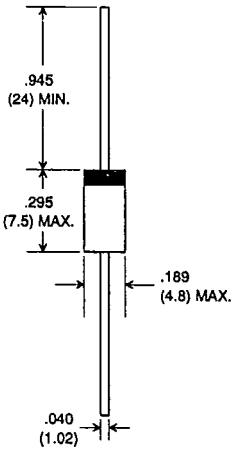

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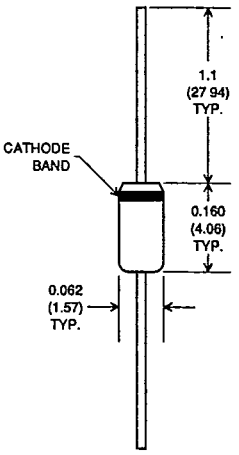

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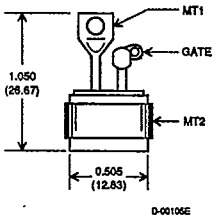

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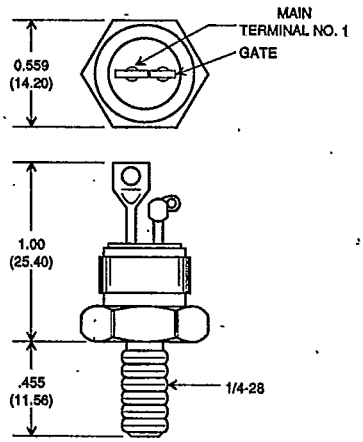
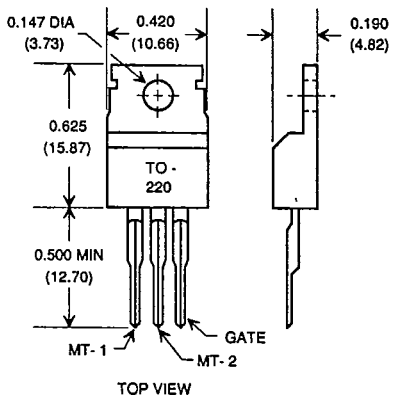
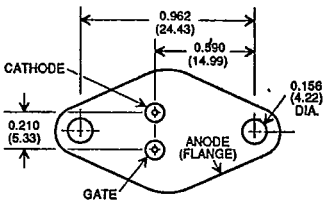


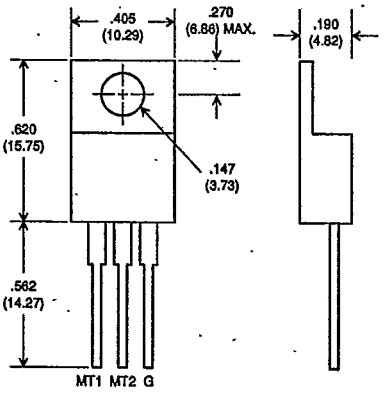
S-050



S-051



S-052



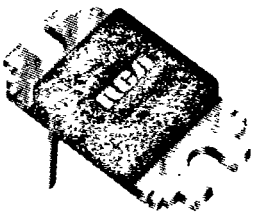
T-104

Dimensions in inches (millimeters).
All dimensions are max. unless otherwise indicated

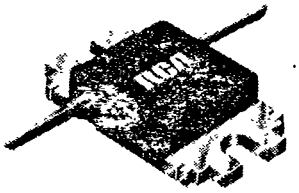
T-91-20

Replacing Transistors in the JEDEC TO-219 'Plastic TO-3' Case

Vertical-Lead Types (for TO-3 Sockets)	Horizontal Leads (for PC Boards)
2N5034	2N5035
2N5036	2N5037
40514	40513
40542	
40543	
40051 (PNP)	



JEDEC TO-219AA



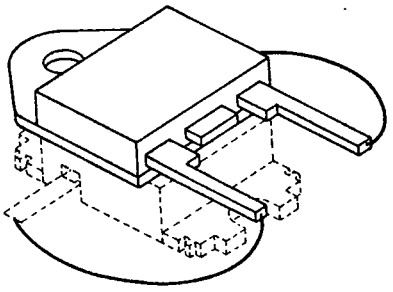
JEDEC TO-219AB

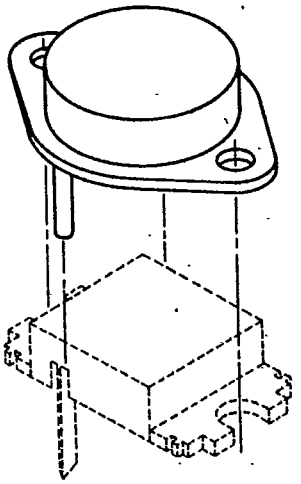
The RCA transistors above were discontinued in 1975. They were plastic versions of the JEDEC TO-3 metal case and fit a TO-3 socket. They have no "look-alike" replacements.

With the exception of type 40051, all were NPN audio frequency power types. The 40542 and 40051 were an AF complementary NPN/PNP pair.

The SK3027/130 in the TO-3 case will replace all of these types (except 40051) electrically, and is recommended to retrofit the vertical-lead devices. When 40542 and 40051 are used as complements, the recommended replacements are the complementary pair SK3297/280 (NPN) and SK3359/281 (PNP).

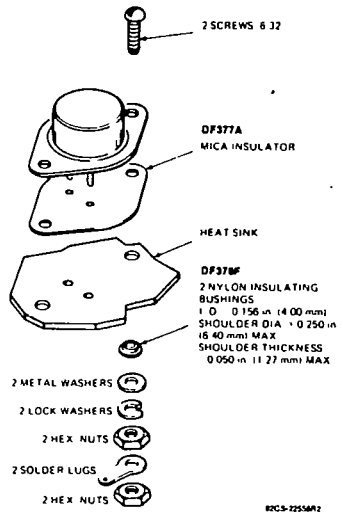
Extensive board modifications would be needed if a standard TO-3 were used to replace the horizontal-lead devices on a pc board. Hence, the suggested replacement is a transistor in a plastic case currently designed as a TO-3 retrofit, even though the new plastic cases do not have the base and emitter leads extended to the sides at a 90° angle. The SK3958/390 is a satisfactory electrical replacement and can be mounted on a pc board. Because the leads of these devices should not be bent to the sides, a piece of connecting wire ("spaghetti") should be used to make the connection from the base and emitter leads of the replacement to the solder point on the board.



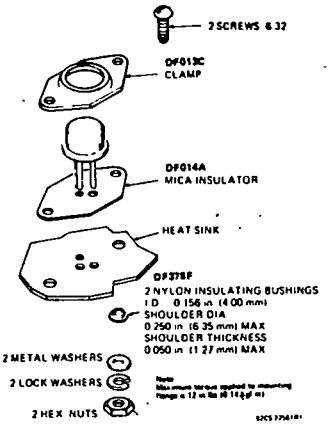


Suggested Hardware and Mounting Arrangements for Various Case Styles

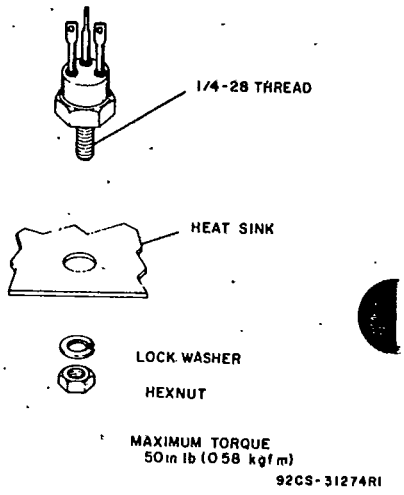
TO-3/TO-204MA



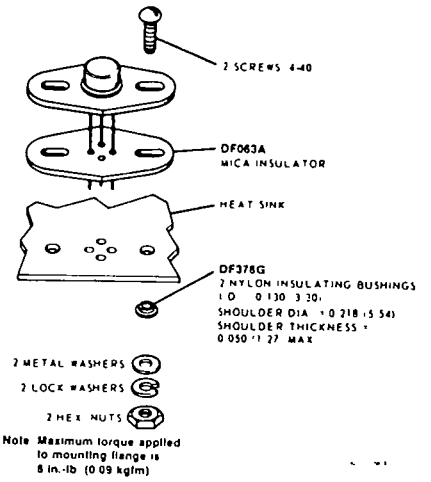
TO-8



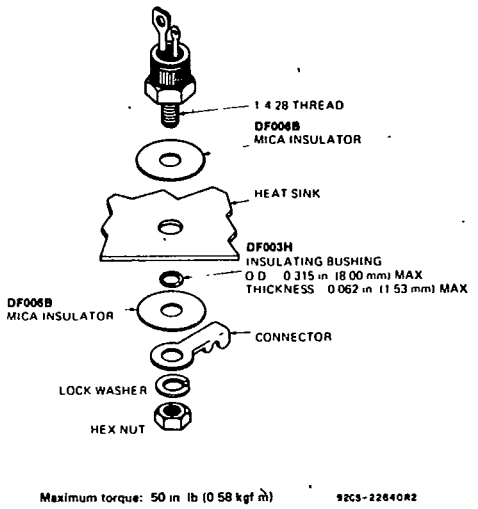
TO-61/TO-211MA



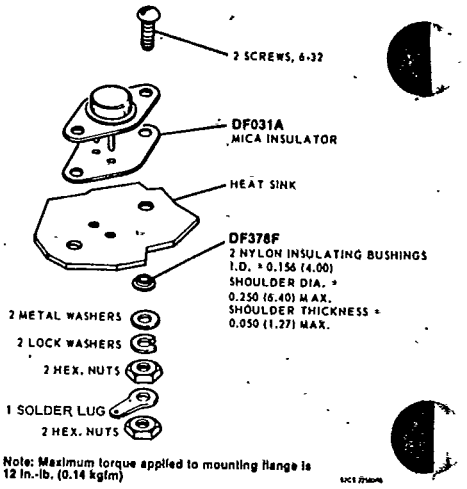
TO-5/TO-205MA
TO-39/TO-25MD
With Flange



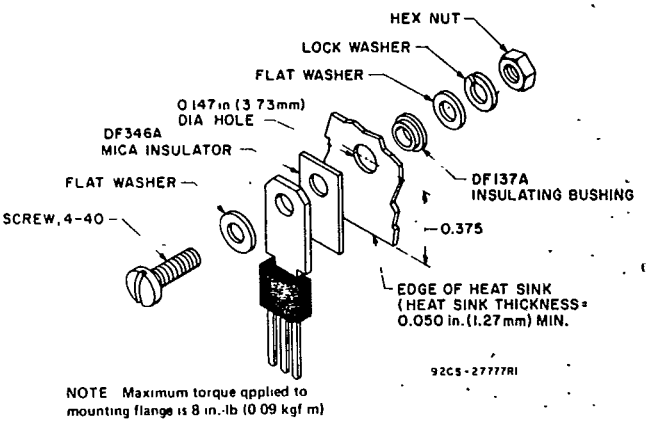
TO-48/TO-208MA



TO-66/TO-213MA



TO-202AB



NOTE Maximum torque qpplied to mounting flange is 8 in.-lb (0 09 kgf m)