

2N278

POWER TRANSISTOR

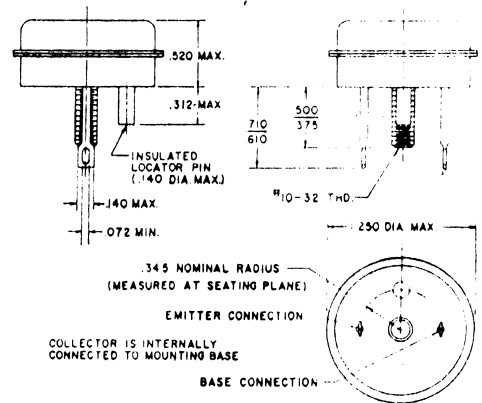
GENERAL DESCRIPTION

Radio Type 2N278 is a PNP germanium power transistor designed for general use with a 12 volt power supply. It is characterized by a maximum emitter current of 15 amperes, a maximum collector diode voltage of 50 volts and a thermal resistance below 0.6°C per watt. A low saturation resistance will give high efficiency in switching applications. The distortion is low both in class A operation and in class AB operation with matched pairs.

The case is hermetically sealed. The collector and the case are electrically connected.

The Delco 2N278 transistors will be supplied either in single units or in matched pairs.

DIMENSIONS AND CONNECTIONS



NOTE: MAXIMUM RECOMMENDED TORQUE ON THE MOUNTING STUD IS TWELVE INCH-POUNDS.

ABSOLUTE MAXIMUM RATINGS

Collector diode voltage V_{CB} -50 volts	Base current (continuous) 4 amp.
($V_{EB} = -1.5$ volts)	Maximum junction temperature 100 °C
Emitter diode voltage V_{EBO} -30 volts	Minimum junction temperature -65 °C
Emitter current (continuous) 15 amp.	

ELECTRICAL CHARACTERISTICS (T = 25 °C)

	Min.	Typical	Max.	
Collector diode current I_{CBO} ($V_{CBO} = -2$ volts)		100		microamp
Collector diode current I_{CB} ($V_{CB} = -50$ volts, $V_{EB} = -1.5$ volts)		2	4	ma
Collector diode current I_{CBO} ($V_{CBO} = -50$ volts, 71°C)			15	ma
Emitter diode current I_{EBO} ($V_{EBO} = -30$ volts)		1	4	ma
Current gain h_{FE} ($V_{CB} = -2$ volts, $I_C = 5$ amps)	35		70	
Current gain h_{FE} ($V_{CB} = -2$ volts, $I_C = 12$ amps)		25		
Base voltage V_{EB} ($V_{CB} = -2$ volts, $I_C = 5$ amps)65		volt
Floating potential V_{EBF} ($V_{CBO} = -50$ volts, $I_E = 0$)			-1	volt
Saturation voltage V_{EC} ($I_B = 2$ amp, $I_C = 12$ amps)3	1	volt
Collector to emitter voltage V_{CES} ($I_C = 300$ ma, $V_{EB} = 0$)°	-45			volts
Collector to emitter voltage V_{CEO} ($I_C = 1$ amp, $I_B = 0$)°	-30			volts
Common emitter current amplification cutoff frequency $f_{\alpha e}$ ($I_C = 5$ amp, $V_{CE} = -6$ volts)		10		kes
Rise time ("on" $I_C = 12$ Adc, $I_B = 2$ amp, $V_{CE} = -12$ volts)		15		microsec
Fall time ("off" $I_C = 0$, $V_{EB} = -6$ volts, $R_{EB} = 10$ ohms).....		15		microsec

°In order to avoid excessive heating of the collector junction, perform test with the sweep method.

THERMAL CHARACTERISTICS

Thermal resistance (junction to case)	5	°C/Watt
Thermal resistance (junction to heat sink)†	6	°C/Watt
Thermal capacity for pulses in the 1 to 10 millisecond range075	watt sec °C

†When mounted on any Delco Radio heat sink with maximum recommended torque on the mounting stud. Add 5°C/Watt for mica insulator. These values assume that silicone oil (1000 centistokes viscosity) is applied at mounting interfaces.