

Germanium PNP Transistor

2N174

60/80V / 15A

DATASHEET

OEM – Delco

Source: Delco Power Transistors 1958

DELCO RADIO DIVISION
 GENERAL MOTORS CORPORATION
 KOKOMO, INDIANA

2N174
POWER TRANSISTOR

Distributed in the U.K. by
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ENGINEERING DATA SHEET
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November 15, 1958

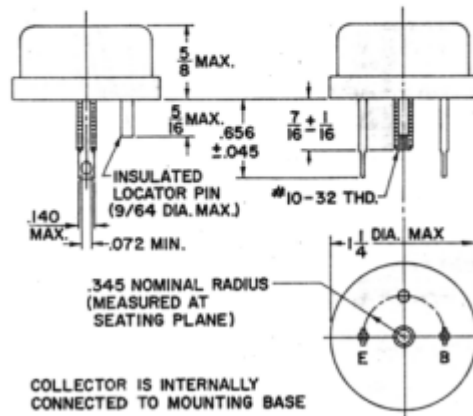
GENERAL DESCRIPTION

The improved Delco Radio 2N174 is a P-N-P germanium power transistor designed for general use with a 28 volt power supply and for use with a 12 volt power supply in applications where high voltage transients are encountered. It is characterized by a new, higher maximum emitter current of 15 amperes, a maximum collector diode rating of 80 volts and a thermal resistance below .8°C per watt. The maximum power dissipation at a mounting base temperature of 71°C is 30 watts. A low saturation resistance will give high efficiency in switching applications.

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

The Delco 2N174 transistors will be supplied either in single units or in matched pairs.

DIMENSIONS AND CONNECTIONS



ABSOLUTE MAXIMUM RATINGS

Collector diode voltage V_{CB} (.....)	80 volts	Maximum junction temperature	
($V_{EB} = -1.5$ volts)		Continuous	95°C
Emitter diode voltage V_{EB} (.....)	60 volts	Intermittent	100°C
Emitter current (continuous)	15 amp.	Minimum junction temperature	-65°C
Base current (continuous)	4 amp.		

ELECTRICAL CHARACTERISTICS (T = 25°C)

	Min.	Typical	Max.	
Collector diode current I_{CO} ($V_{CB} = -2$ volts)		100		microamp
Collector diode current I_{CO} ($V_{CB} = -80$ volts)		2	8	ma
Emitter diode current I_{EO} ($V_{EB} = -60$ volts)		1	8	ma
Current gain ($V_{CE} = -2$ volts, $I_C = 5$ amps)	25		50	
Current gain ($V_{CE} = -2$ volts, $I_C = 12$ amps)		20		
Base voltage V_{EB} ($V_{EC} = -2$ volts, $I_C = 5$ amps)65	.9	volt
Floating potential V_{EB} ($V_{CB} = -80$ volts, $I_E = 0$)			1	volt
Saturation voltage V_{EC} ($I_B = 2$ amp, $I_C = 12$ amps)3	.9	volt
Collector to emitter voltage V_{CES} ($I_C = 300$ ma d.c., $V_{EB} = 0$)	70			volts
Collector to emitter voltage V_{CEO} ($I_C = 300$ ma d.c., $I_B = 0$)		60		volts
Common emitter current amplification cutoff frequency ($I_C = 5$ amp, $V_{EC} = -6$ 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, $R_{EB} = 10\Omega$)		15		microsec

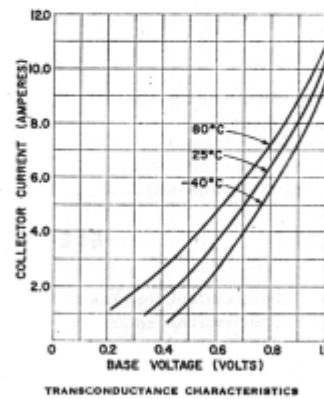
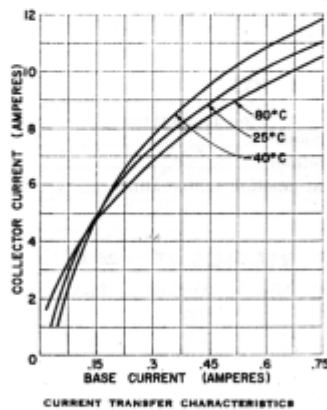
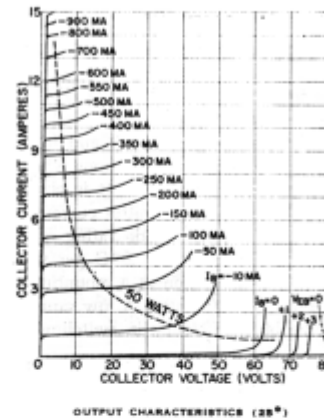
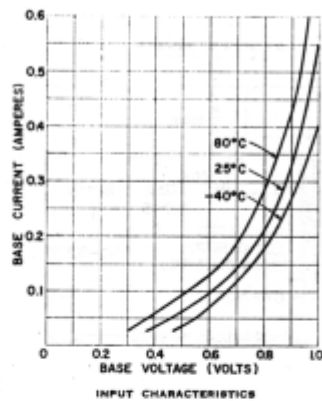
THERMAL CHARACTERISTICS

Thermal resistance (junction to mounting base)5	.8	°C/watt
Thermal capacity (for pulses in 1 to 10 millisecond range)075		watt sec/°C

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TYPICAL CHARACTERISTICS, COMMON EMITTER



MECHANICAL DATA

The 2N174 transistor has been designed to pass the following environmental tests: (The numbers refer to paragraphs of MIL-T-19500) Temperature Cycling (4.6.24), Glass Strain (4.6.25), Moisture Resistance (4.6.26), Shock (4.6.28), Vibration, Fatigue (4.6.30), Vibration, Noise (4.6.31) and Reduced Pressure (15 mm of mercury) (4.6.32).

Maximum recommended torque on the mounting stud is twelve inch-pounds.