

# Germanium PNP Transistor

## **2N174A**

60/80V / 15A

# DATASHEET

OEM – Delco

Source: Delco Power Transistors 1958

**DELCO RADIO DIVISION**  
 GENERAL MOTORS CORPORATION  
 KOKOMO, INDIANA

**2N174A**  
**POWER TRANSISTOR**

ENGINEERING DATA SHEET  
 SUPERSEDES ALL PREVIOUS DATA SHEETS

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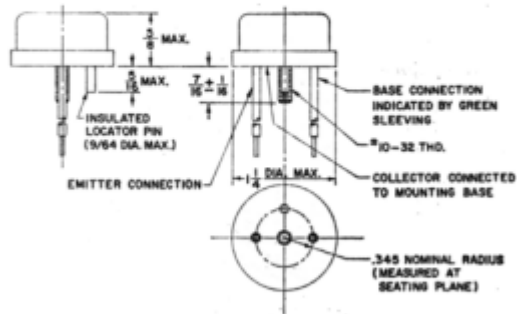
**GENERAL DESCRIPTION**

The Delco Radio 2N174A 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 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 2N174A is designed to meet military specification MIL-T-19500/13A.

The Delco 2N174A 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 $V_{CB}$ (.....) 80 volts	Maximum junction temperature	
( $V_{EB} = -1.5$ volts)	Continuous	95°C
Emitter diode voltage $V_{EB}$ (.....) 60 volts	Intermittent	100°C
Collector current (continuous) (.....) 15 amp.	Minimum junction temperature	-65°C
Base current (continuous) (.....) 4 amp.		

**ELECTRICAL CHARACTERISTICS**

T = 25°C unless otherwise specified

	Min.	Typical	Max.	
Collector diode current $I_{CO}$ ( $V_{CB} = -2$ volts) (.....)		100	200	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
Collector diode current $I_{CO}$ ( $V_{CB} = -30$ volts, 71°C) (.....)		4	6	ma
Emitter diode current $I_{EO}$ ( $V_{EB} = -30$ volts, 71°C) (.....)		4	6	ma
Floating potential $V_{EB}$ ( $V_{CB} = -80$ volts, $I_E = 0$ ) (.....)		.15	1	volt
Current gain ( $V_{CE} = -2$ volts, $I_C = 1.2$ amp) (.....)	40	55	80	
Current gain ( $V_{CE} = -2$ volts, $I_C = 5$ amps) (.....)	25	35		
Base voltage $V_{EB}$ ( $V_{EC} = -2$ volts, $I_C = 1.2$ amp) (.....)		.35	.5	volt
Base voltage $V_{EB}$ ( $V_{EC} = -2$ volts, $I_C = 5$ amps) (.....)		.65	.9	volt
Saturation voltage $V_{EC}$ ( $I_B = 2$ amp, $I_C = 12$ amps) (.....)		.3	.7	volt
Collector to emitter voltage $V_{CEB}$ ( $I_C = 300$ 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 base current amplification cutoff frequency ( $I_C = 1$ amp $V_{CB} = 12$ volts) (.....)	100			kes
Rise time ("on" $I_C = 12$ Adc, $I_B = 2$ Adc, $V_{CE} = -12$ volts) (.....)		15		microsec
Fall time ("off" $I_C = 0$ , $V_{EB} = -6$ volts, $R_{EB} = 10$ ohms) (.....)		15		microsec

**THERMAL CHARACTERISTICS**

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

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## TYPICAL CHARACTERISTICS, COMMON EMITTER

