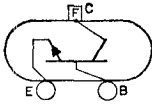


**POWER TRANSISTOR**



Silicon n-p-n type used in a wide variety of high-power switching and amplifier applications in industrial and military equipment. It is used in power switching, dc-to-dc converter, inverter, chopper, solenoid and relay control

**2N1488**

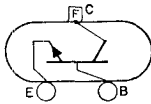
circuits; in oscillator, regulator, and pulse-amplifier circuits; and as a class A or class B push-pull audio and servo amplifier. It features low saturation resistance, high current and power dissipation, high beta at high current, and excellent high-temperature performance. Package is similar to JEDEC No. TO-3; outline 23, Outlines Section. This type is identical with type 2N1490 except for the following:

**CHARACTERISTICS**

*In Common-Emitter Circuit*

DC Forward Current-Transfer Ratio (with collector-to-emitter volts = 4 and collector amperes = 1.5) .....	15 to 45
DC Collector-to-Emitter Saturation Resistance (with collector amperes = 1.5 and base ma = 300) .....	2 max ohms

**POWER TRANSISTOR**



Silicon n-p-n type used in a wide variety of high-power switching and amplifier applications in industrial and military equipment. It is used in power switching, dc-to-dc converter, inverter, chopper, solenoid and relay control

**2N1489**

circuits; in oscillator, regulator, and pulse-amplifier circuits; and as a class A or class B push-pull audio and servo amplifier. It features low saturation resistance, high current and power dissipation, high beta at high current, and excellent high-temperature performance. Package is similar to JEDEC No. TO-3; outline 23, Outlines Section. This type is identical with type 2N1490 except for the following:

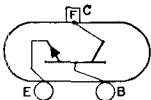
**MAXIMUM RATINGS**

COLLECTOR-TO-BASE VOLTAGE (with emitter open) .....	60 max	volts
COLLECTOR-TO-EMITTER VOLTAGE: With emitter-to-base volts = 1.5 .....	60 max	volts
With base open .....	40 max	volts

**CHARACTERISTICS**

Collector-to-Emitter Breakdown Voltage (with emitter-to-base volts = 1.5 and collector ma = 0.5) .....	60 min	volts
Collector-to-Emitter Sustaining Voltage (with collector ma = 100 and base current = 0) .....	40 min	volts

**POWER TRANSISTOR**



Silicon n-p-n type used in a wide variety of high-power switching and amplifier applications in industrial and military equipment. It is used in power switching, dc-to-dc converter, inverter, chopper, solenoid and relay control

**2N1490**

circuits; in oscillator, regulator, and pulse-amplifier circuits; and as a class A or

class B push-pull audio and servo amplifier. It features low saturation resistance, high current and power dissipation, high beta at high current, and excellent high-temperature performance. Package is similar to JEDEC No. TO-3; outline 23, Outlines Section.

**MAXIMUM RATINGS**

COLLECTOR-TO-BASE VOLTAGE (with emitter open).....	100 max	volts
COLLECTOR-TO-EMITTER VOLTAGE:		
With emitter-to-base volts = 1.5.....	100 max	volts
With base open.....	55 max	volts
EMITTER-TO-BASE VOLTAGE (with collector open).....	10 max	volts
COLLECTOR CURRENT.....	6 max	amperes
EMITTER CURRENT.....	-8 max	amperes
BASE CURRENT.....	3 max	amperes
TRANSISTOR DISSIPATION:		
At mounting-flange temperatures up to 25°C.....	75 max	watts
At mounting-flange temperatures above 25°C.....	See curve	page 68
TEMPERATURE RANGE:		
Operating (junction) and storage.....	-65 to 200	°C

**CHARACTERISTICS**

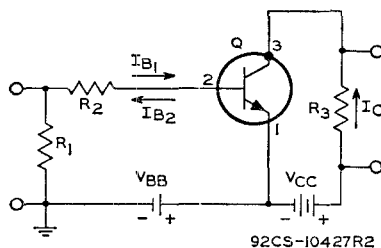
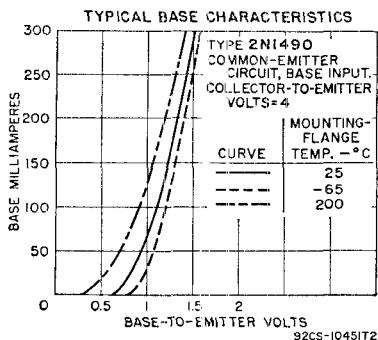
Collector-to-Emitter Breakdown Voltage (with emitter-to-base volts = 1.5 and collector ma = 0.5).....	100 min	volts
Collector-to-Emitter Sustaining Voltage (with collector ma = 100 and base current = 0).....	55 min	volts
Base-to-Emitter Voltage (with collector-to-emitter volts = 4 and collector amperes = 1.5).....	8.5 max	volts
Collector-Cutoff Current (with collector-to-base volts = 30 and emitter current = 0).....	25 max	µa
Emitter-Cutoff Current (with emitter-to-base volts = 10 and collector current = 0).....	25 max	µa
Thermal Resistance:		
Junction-to-mounting-flange.....	2.33 max	°C/watt
Thermal Time Constant.....	12	msec

*In Common-Base Circuit*

Small-Signal Forward-Current-Transfer-Ratio Cutoff Frequency (with collector-to-base volts = 12 and collector ma = 100).....	1	Mc
Collector-to-Base Capacitance (with collector-to-base volts = 40 and emitter current = 0).....	200	pf

*In Common-Emitter Circuit*

DC Forward Current-Transfer Ratio (with collector-to-emitter volts = 4 and collector amperes = 1.5).....	25 to 75	
Collector-to-Emitter Saturation Resistance (with collector amperes = 1.5 and base ma = 300).....	0.67 max	ohm



V<sub>BB</sub> = 8.5 volts  
 V<sub>CC</sub> = 12 volts  
 R<sub>1</sub> = 50 ohms, 1 watt  
 R<sub>2</sub> = 30 ohms, 1 watt  
 R<sub>3</sub> = 7.8 ohms, 2 watts

**TYPICAL OPERATION IN POWER-SWITCHING CIRCUIT ABOVE**

DC Collector Supply Voltage (V <sub>CC</sub> ).....	12	volts
DC Base Supply Voltage (V <sub>BB</sub> ).....	-8.5	volts