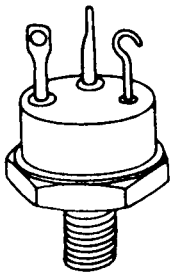
X00244

NPN Silicon Power Transistor 2N1724

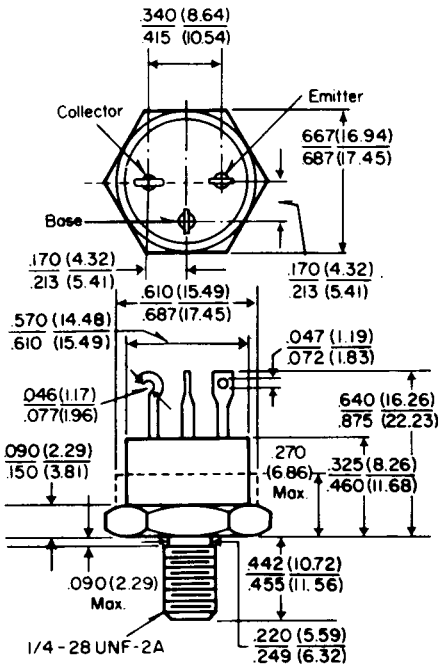
TO-61



Application

The SSDI 2N1724 is a NPN double epitaxial silicon power transistor designed for high reliability operation in military, space and industrial applications. Fast switching speeds, low saturation voltages and high linear gain make these transistors ideal for use in regulator, amplifier and switching circuits. The silicon chip is mounted on a molybdenum pad using hard solders for thermal fatigue protection.

Dimensions in Inches (and Millimeters)



Case: TO-61

Maximum Ratings and Characteristics Tc = 25°C unless specified	Symbol	Rating
*Storage Temperature	T_{STG}	−65°C to 200°C
*Operating Temperature	T_J	−65°C to 175°C
*Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	80V
*Collector-Base Voltage	V_{CBO}	120V
*Emitter-Base Voltage	V_{EBO}	10V
*Continuous Collector Current	I_C	5A
*Peak Collector Current		7.5A
Continuous Base Current	I_B	2A
Thermal Resistance	$R_{\theta JC}$	1.5°C/W
*Power Dissipation (T_C = 100°C)	P_T	50W

* JEDEC registered data.

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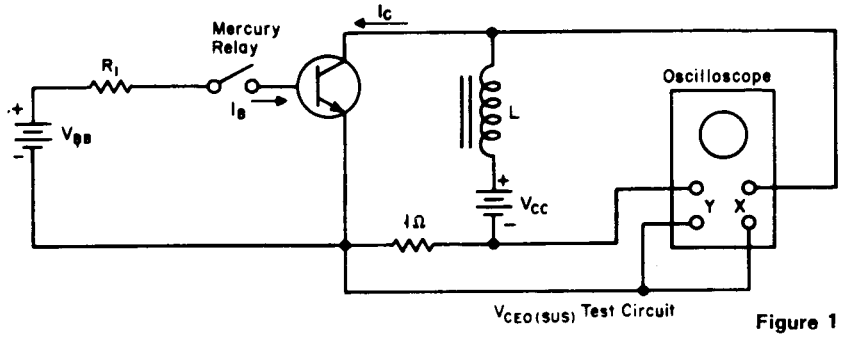
2N1724

Electrical Specifications
T_C = 25°C unless specified

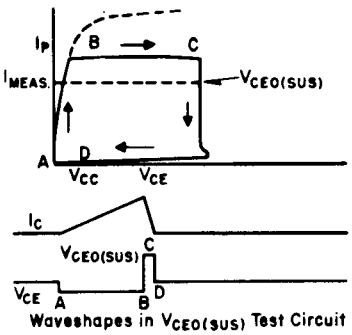
Test	Symbol	Test Conditions	Limits Min.	Limits Max.	Units
*Collector Cut-off Current	I_{CES}	$V_{BE} = 0$, $V_{CE} = 60V$ $V_{BE} = 0$, $V_{CE} = 60V$, $T_C = 150°C$ $V_{BE} = 0$, $V_{CE} = 120V$, $T_C = 150°C$		1.0 2.0 10	mA mA mA
*Emitter Cut-off Current	I_{EBO}	$I_C = 0$, $V_{EB} = 3V$ $I_C = 0$, $V_{EB} = 10V$		10 10	mA mA
*Emitter Floating Potential	V_{EBF}	$V_{CB} = 80V$		10	V
*Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$ ①	$I_C = 200mA$, $I_B = 0$	80		V
*DC Forward Current Transfer Ratio	h_{FE} ②	$I_C = 0.1A$, $V_{CE} = 15V$ $I_C = 2A$, $V_{CE} = 15V$ $I_C = 2A$, $V_{CE} = 15V$, $T_C = -55°C$	20 20 12	90	
*Collector-Emitter Saturation Voltage	$V_{CE(sat)}$ ②	$I_C = 2A$, $I_B = 0.2A$		1.0	V
*Base-Emitter Voltage	V_{BE} ②	$I_C = 2A$, $I_B = 0.2A$		2.0	V
*Output Capacitance	C_{ob}	$V_{CB} = 15V$, $I_E = 0$, $f = 1$ MHz		550	pf
Gain-Bandwidth Product	f_T	$V_{CE} = 10V$, $I_C = 1A$, $f = 10$ MHz	40		MHz
Turn-on Time	t_{on}	$V_{CC} = 30V$, $I_C = 2A$, $I_{B(on)} = .16A$		.3	μsec.
Storage Time	t_s	$V_{CC} = 30V$, $I_C = 2A$, $I_{B(on)} = I_{B(off)} = .16A$		.6	μsec.
Fall Time	t_f	$V_{CC} = 30V$, $I_C = 2A$, $I_{B(on)} = I_{B(off)} = .16A$		.3	μsec.

① $V_{CEO(sus)}$ is measured at $I_{CEO} = 200mA$ and must not be measured on a curve tracer (See Figure 1).
② Pulsed test. Pulse width = 300 μsec., Duty cycle < 2%.
* JEDEC registered data.



$V_{CEO(SUS)}$ Test Circuit

Figure 1



Waveshapes in $V_{CEO(SUS)}$ Test Circuit

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