CHARACTERISTICS (cont'd)

Saturated Switching Turn-Off Time (V_{CB} = −30 V, I_C = −150 mA, I_{B_2} = 15 mA, $V_{BB} \approx$ 4 V)	$t_s + t_f$	700 max	ns
Thermal Resistance, Junction-to-Case	θ_{J-C}	25 max	°C/W
Thermal Resistance, Junction-to-Ambient	θ_{J-A}	165 max	°C/W

POWER TRANSISTOR 2N4037

Si p-n-p double-diffused epitaxial planar type used in a wide variety of small-signal, medium-power applications in military, industrial, and commercial equipment. The p-n-p construction permits complementary operation with a matching n-p-n type such as the 2N3053. JEDEC TO-5, Outline No.3. Terminals: 1 - emitter, 2 - base, 3 - collector and case.

MAXIMUM RATINGS

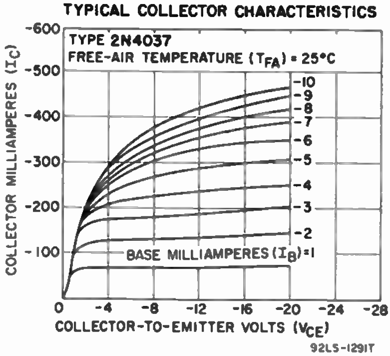
Collector-to-Base Voltage	V_{CBO}	−60	V
Collector-to-Emitter Sustaining Voltage:			
V_{BE} = 1.5 V	V_{CEV}(sus)	−60	V
$R_{BE} \leqq$ 200 Ω	V_{CER}(sus)	−60	V
Base open	V_{CEO}(sus)	−40	V
Emitter-to-Base Voltage	V_{EBO}	−7	V
Collector Current	I_C	−1	A
Base Current	I_B	−0.5	A
Transistor Dissipation:*			
T_A up to 25°C	P_T	1	W
T_C up to 25°C	P_T	7	W
T_A or T_C above 25°C	P_T	See curve page 116	
Temperature Range:			
Operating (Junction)	T_J(opr)	−65 to 200	°C
Storage	T_{STG}	−65 to 200	°C
Lead-Soldering Temperature (10 s max)	T_L	230	°C

* See curve for maximum pulse operating areas.

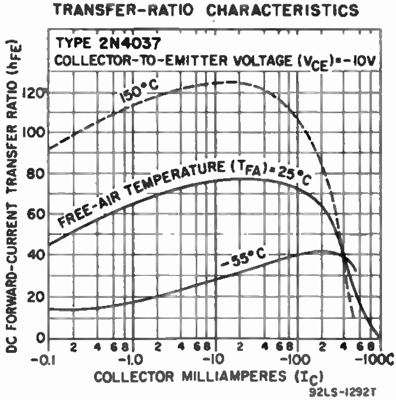
CHARACTERISTICS (At case temperature = 25°C)

Collector-to-Base Breakdown Voltage (I_C = −0.1 mA, I_E = 0)	$V_{(BR)CBO}$	−60 min	V
Emitter-to-Base Breakdown Voltage (I_E = −0.1 mA, I_C = 0)	$V_{(BR)EBO}$	−7 min	V
Collector-to-Emitter Sustaining Voltage:			V
V_{BE} = 1.5 V, I_C = −100 mA	V_{CEV}(sus)	−60 min	
$R_{BE} \leqq$ 200 Ω, I_C = −100 mA	V_{CER}(sus)	−60 min	V
I_C = −100 mA, I_B = 0	V_{CEO}(sus)	−40 min	V
Collector-to-Emitter Saturation Voltage (I_C = −150 mA, I_B = −15 mA)	V_{CE}(sat)	−1.4 max	V

TYPICAL COLLECTOR CHARACTERISTICS



TYPICAL DC FORWARD-CURRENT TRANSFER-RATIO CHARACTERISTICS



CHARACTERISTICS (cont'd)

Collector-Cutoff Current:			
V_{CB} = −60 V, I_E = 0	I_{CBO}	−0.25 max	μA
V_{CE} = −30 V, I_B = 0	I_{CEO}	−5 max	μA
Emitter-Cutoff Current (V_{EB} = −5 V, I_C = 0)	I_{EBO}	−1 max	μA
Static Forward-Current Transfer Ratio (V_{CE} = −10 V, I_C = −1 mA)	h_{FE}	15 min	
Pulsed Static Forward-Current Transfer Ratio (V_{CE} = −10 V, I_C = −150 mA, t_p = 300 μs, df ≦ 2%)	h_{FE}(pulsed)	50 to 250	
Small-Signal Forward-Current Transfer Ratio (V_{CE} = −10 V, I_C = −50 mA, f = 20 MHz)	h_{fe}	3 min	
Input Capacitance (V_{EB} = −0.5 V, I_C = 0)	C_{ibo}	90 max	pF
Output Capacitance (V_{CB} = −10 V, I_E = 0)	C_{obo}	30 max	pF
Thermal Resistance, Junction-to-Case	θ_{J-C}	1.17 max	°C/W
Thermal Resistance, Junction-to-Ambient	θ_{J-A}	165 max	°C/W

* This value does not apply to type 40391.

2N4063 TRANSISTOR

Si n-p-n triple-diffused type used in high-speed-switching and linear-amplifier applications, such as high-voltage differential and operational amplifiers, high-voltage inverters, and series regulators for industrial and military applications. JEDEC TO-5 (with flange), Outline No.3. Terminals: 1 - emitter, 2 - base, 3 - collector and case (with flange). This type is electrically identical with type 2N3439.

2N4064 TRANSISTOR

Si n-p-n triple diffused type used in high-speed-switching and linear-amplifier applications, such as high-voltage differential and operational amplifiers, high-voltage inverters, and series regulators for industrial and military applications. JEDEC TO-5 (with flange), Outline No.3. Terminals: 1 - emitter, 2 - base, 3 - collector and case (with flange). This type is electrically identical with type 2N3440.

2N4068 TRANSISTOR

Si n-p-n type used in wide-band-amplifier and relay-driver applications in critical industrial equipment such as video amplifiers, television cameras, camera chains, monitors, oscilloscopes, and neon-indicator drivers. JEDEC TO-104, Outline No.26 (3-lead). Terminals: 1 - emitter, 2 - base, 3 - collector and case.

MAXIMUM RATINGS

Collector-to-Emitter Voltage	V_{CEO}	150	V
Emitter-to-Base Voltage	V_{EBO}	5	V
Collector-Current	I_C	200	mA
Transistor Dissipation:			
T_A up to 25°C	P_T	0.5	W
T_A above 25°C	P_T	See curve page 116	
Temperature Range:			
Operating (Junction)	T_J(opr)	−65 to 175	°C
Storage	T_{STG}	−65 to 175	°C
Lead-Soldering Temperature (10 s max)	T_L	255	°C

CHARACTERISTICS

Collector-to-Emitter Breakdown Voltage (I_C = 1 mA, I_B = 0)	$V_{(BR)CEO}$	150 min; 180 typ	V
Emitter-to-Base Breakdown Voltage (I_E = −10 μA, I_C = 0)	$V_{(BR)EBO}$	5 min; 7 typ	V
Collector-to-Emitter Saturation Voltage (I_C = 30 mA, I_B = 1 mA)	V_{CE}(sat)	1 typ; 3 max.	V
Base-to-Emitter Saturation Voltage (I_C = 30 mA, I_B = 1 mA)	V_{BE}(sat)	0.68	V