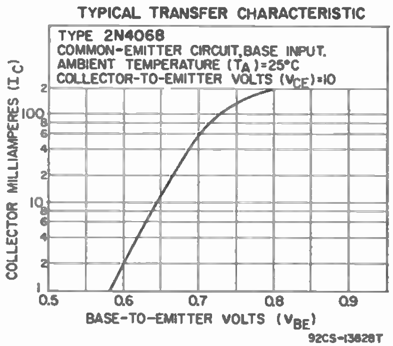
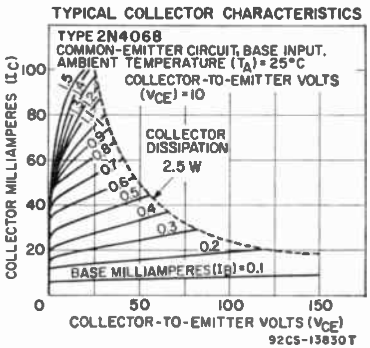
CHARACTERISTICS (cont'd)

Collector-Cutoff Current (V_{CB} = 120 V, I_E = 0)	I_{CBO}	5 typ; 50 max	nA
Static Forward-Current Transfer Ratio (V_{CE} = 10 V, I_C = 30 mA)	h_{FE}	30 min; 70 typ	
Small-Signal Forward-Current Transfer Ratio (V_{CE} = 10 V, I_C = 30 mA, f = 1 kHz)	h_{fe}	80	
Gain-Bandwidth Product:			
V_{CE} = 10 V, I_C = 30 mA, f = 100 MHz	f_T	50 min; 100 typ	MHz
V_{CE} = 140 V, I_C = 2 mA, f = 100 MHz	f_T	50 min; 100 typ	MHz
Output Capacitance* (V_{CB} = 10 V, I_C = 0, f = 1 MHz)	C_{obo}	2.8 typ; 3.5 max	pF
Thermal Resistance, Junction-to-Case	θ_{J-C}	45 typ; 60 max	°C/W
Thermal Resistance, Junction-to-Ambient	θ_{J-A}	300 max	°C/W

* Three-terminal measurement with lead No. 1 (emitter) and lead No. 3 (case) connected to guard terminal.





TRANSISTOR 2N4069

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 (with heat radiator), **Outline No.26** (3-lead). **Terminals:** 1 - emitter, 2 - base, 3 - collector and case (with heat radiator). This type is electrically identical with type 2N4068 except for the following items:

MAXIMUM RATINGS

Transistor Dissipation:			
T_A up to 25°C	P_T	1	W
T_A above 25°C	P_T	See curve page 116	

CHARACTERISTICS

Thermal Resistance, Junction-to-Ambient	θ_{J-A}	150 max	°C/W

TRANSISTOR 2N4074

Si **n-p-n epitaxial planar** type used in high-voltage, high-current audio and video amplifier service in commercial and industrial equipment. JEDEC TO-104, **Outline No.26** (3-lead). **Terminals:** 1 - emitter, 2 - base, 3 - collector and case.

MAXIMUM RATINGS

Collector-to-Emitter Voltage:			
V_{BE} = −1 V	V_{CEV}	40	V
Base open	V_{CEO}	40	V
Emitter-to-Base Voltage	V_{EBO}	8	V
Collector Current	I_C	300	mA

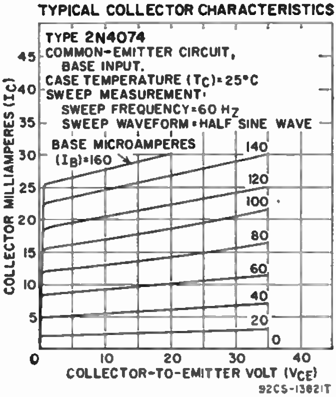
MAXIMUM RATINGS (cont'd)

Emitter Current	I_E	−300	mA
Transistor Dissipation:			
T_C up to 75°C	P_T	2	W
T_C above 75°C	P_T	See curve page 116	
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 (At case temperature = 25°C)

Collector-to-Emitter Breakdown Voltage (I_C = 10 mA, I_B = 0)	$V_{(BR)CEO}$	40 min	V
Emitter-to-Base Breakdown Voltage (I_E = 0.05 mA, I_C = 0)	$V_{(BR)EBO}$	8 min	V
Collector-to-Emitter Saturation Voltage (I_C = 300 mA, I_B = 15 mA)	V_{CE}(sat)	0.22 typ; 0.3 max	V
Base-to-Emitter Saturation Voltage (I_C = 300 mA, I_B = 15 mA)	V_{BE}(sat)	1 typ; 1.5 max	V
Collector-Cutoff Current:			
V_{CB} = 25 V, I_E = 0	I_{CBO}	10 max	nA
V_{CB} = 25 V, I_E = 0, T_C = 85°C	I_{CBO}	1 max	μA
V_{CE} = 40 V, V_{BE} = 1 V	I_{CEV}	10 max	μA
Emitter-Cutoff Current (V_{BE} = −2.5 V, I_C = 0)	I_{EBO}	10 max	nA
Static Forward-Current Transfer Ratio:			
V_{CE} = 6 V, I_C = 0.5 mA	h_{FE}	35 min; 75 typ	
V_{CE} = 10 V, I_C = 10 mA	h_{FE}	75 to 300	
V_{CE} = 1 V, I_C = 100 mA	h_{FE}	50 min; 140 typ	
Small-Signal Forward-Current Transfer Ratio (V_{CE} = 12 V, I_C = 10 mA, f = 1 kHz)	h_{fe}	75 min; 175 typ	
Gain-Bandwidth Product (V_{CE} = 6 V, I_C = 1 mA, f = 100 MHz)	f_T	50 min; 80 typ	MHz
Intrinsic Base-Spreading Resistance (V_{CE} = 6 V, I_C = 1 mA, f = 100 MHz)	$r_{bb'}$	20 typ; 40 max	Ω
Output Capacitance (V_{CB} = 6 V, I_E = 0, f = 1 MHz)	C_{obo}	12 typ; 20 max	pF
Small-Signal Input Impedance (V_{CE} = 12 V, I_C = 10 mA, f = 1 kHz)	h_{ie}	600	Ω
Small-Signal Output Admittance (V_{CE} = 12 V, I_C = 10 mA, f = 1 kHz)	h_{oe}	75	μmhos
Small-Signal Reverse-Voltage Transfer Ratio (V_{CE} = 12 V, I_C = 10 mA, f = 1 kHz)	h_{re}	125 x 10^{-6}	
Thermal Resistance, Junction-to-Case	θ_{J-C}	50 max	°C/W
Thermal Resistance, Junction-to-Ambient	θ_{J-A}	300 max	°C/W

TYPICAL COLLECTOR CHARACTERISTICS



TYPICAL TRANSFER CHARACTERISTIC