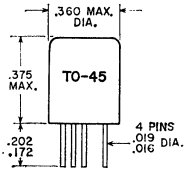
Outlines (cont'd)



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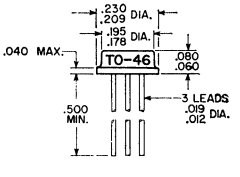

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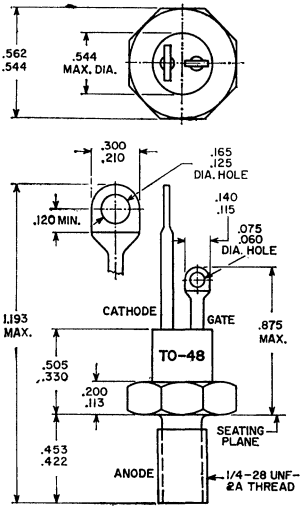

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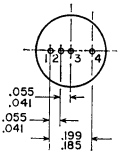

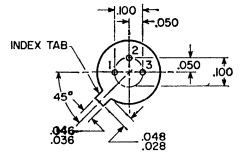

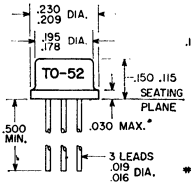

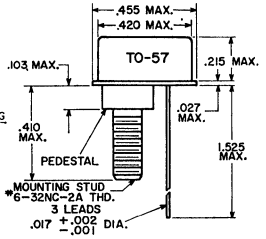

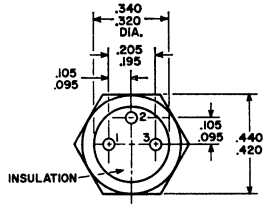

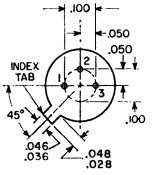

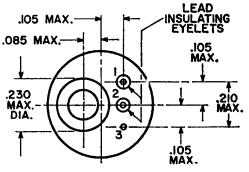

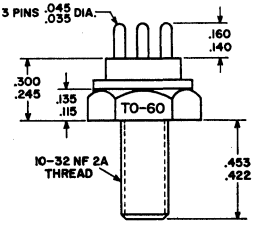

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TRANSISTOR 2N1177

Ge p-n-p alloy-junction drift-field type used in radio-frequency amplifier applications in FM and AM/FM radio receivers. JEDEC TO-45, **Outline** No.15. **Terminals:** 1 - emitter, 2- base, 3 - interpin shield and case, 4 - collector.

MAXIMUM RATINGS

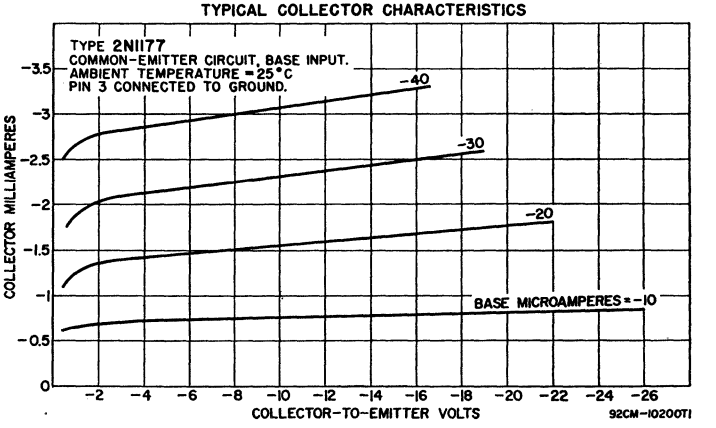
Collector-to-Base Voltage	V_{CBO}	−30	V
Emitter-to-Base Voltage	V_{EBO}	−0.5	V
Collector Current	I_C	−10	mA
Emitter Current	I_E	10	mA
Transistor Dissipation:			
T_A = 25°C	P_T	80	mW
T_A = 55°C	P_T	50	mW
T_A = 71°C	P_T	23	mW
Temperature Range:			
Operating (Ambient)	T_A(opr)	71	°C
Storage	T_{STG}	−65 to 85	°C

CHARACTERISTICS

Collector-to-Base Breakdown Voltage (V_{BE} = 0.5 V, I_C = −50 μA)	$V_{(BR)CBO}$	−30 min	V
Collector-Cutoff Current (V_{CB} = −12 V, I_E = 0)	I_{CBO}	−12 max	μA
Emitter-Cutoff Current (V_{EB} = −0.5 V, I_C = 0)	I_{EBO}	−12 max	μA
Small-Signal Forward-Current Transfer Ratio (V_{CE} = −6 V, I_C = −1 mA, f = 1 kc/s)	h_{fe}	40 to 170	
Small-Signal Forward-Current Transfer-Ratio Cutoff Frequency (V_{CB} = −12 V, I_C = −1 mA)	f_{hfb}	140	Mc/s

TYPICAL OPERATION

Frequency	f	100	Mc/s
DC Collector-to-Base Voltage	V_{CBO}	−12	V
DC Emitter Current	I_E	1.5	mA
Input Resistance (ac output circuit shorted)	R_{ie}	45	Ω
Output Resistance (ac input circuit shorted)	R_{oe}	3800	Ω
Maximum Available Power Gain	MAG	14	dB
Extrinsic Transconductance	g_m	24250	μmhos
Collector Output Capacitance	C_{obo}	2	pF



TRANSISTOR 2N1178

Ge p-n-p alloy-junction drift-field type used in radio-frequency oscillator applications in FM and AM/FM radio receivers. JEDEC TO-45, **Outline** No.15. **Terminals:** 1 - emitter, 2 - base, 3 - interpin shield and case, 4 - col-

lector. This type is identical with type 2N1177 except for the following items:

CHARACTERISTICS

Small-Signal Forward-Current Transfer Ratio (V_{CE} = −6 V, I_C = −1 mA, f = 1 kc/s)	h_{fe}	40 to 275	

TYPICAL OPERATION

Frequency	f	10.7	Mc/s
DC Collector-to-Base Voltage	V_{CBO}	−11	V
DC Emitter Current	I_E	2.5	mA
Extrinsic Transconductance	g_m	21800	μmhos
Collector Output Capacitance	C_{obo}	2	pF

2N1179 TRANSISTOR

Ge p-n-p alloy-junction drift-field type used in radio-frequency mixer applications in FM and AM/FM radio receivers. JEDEC TO-45, **Outline** No.15. **Terminals:** 1 - emitter, 2 - base, 3 - interpin shield and case, 4 - collector. This type is identical with type 2N1177 except for the following items:

CHARACTERISTICS

Small-Signal Forward-Current Transfer Ratio (V_{CE} = −6 V, I_C = −1 mA, f = 1 kc/s)	h_{fe}	40 to 275	

TYPICAL OPERATION

Frequency	f	100	Mc/s
DC Emitter Current	I_E	0.8	mA
Input Resistance (ac output circuit shorted)	R_{ie}	40	Ω
Output Resistance* (ac input circuit shorted)	R_{oe}	90000	Ω
Maximum Available Conversion Power Gain		17	dB
RMS Base-to-Emitter Oscillator-Injection Voltage		125	mV
Extrinsic Conversion Transconductance	g_m	7500	μmhos

* At intermediate frequency of 10.7 Mc/s.

2N1180 TRANSISTOR

Ge p-n-p alloy-junction drift-field type used in intermediate-frequency amplifier applications in FM and AM/FM radio receivers. JEDEC TO-45, **Outline** No.15. **Terminals:** 1 - emitter, 2 - base, 3 - interpin shield and case, 4 - collector. This type is identical with type 2N1177 except for the following items:

MAXIMUM RATINGS

Emitter-to-Base Voltage	V_{EBO}	−0.5	V

CHARACTERISTICS

Small-Signal Forward-Current Transfer Ratio Cutoff Frequency (V_{CB} = −12 V, I_C = −1 mA)	f_{hfb}	100	Mc/s

TYPICAL OPERATION

Frequency	f	10.7	Mc/s
DC Collector-to-Emitter Voltage	V_{CEO}	−12	V
Input Resistance (ac output circuit shorted)	R_{ie}	325	Ω
Output Resistance (ac input circuit shorted)	R_{oe}	24000	Ω
Extrinsic Transconductance	g_m	40250	μmhos
Power Gain:			
Maximum available	MAG	35	dB
Maximum useful:			
Circuit neutralized	MUG	23	dB
Circuit unneutralized	MUG	20	dB