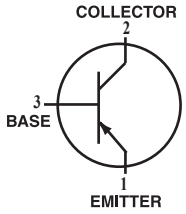
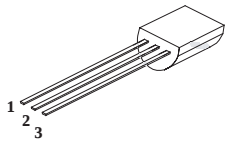
WEITRON

2SA1020

PNP General Purpose Transistors

Lead(Pb)-Free





1. EMITTER
2. COLLECTOR
3. BASE

TO-92MOD

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	**-50**	Vdc
Collector-Base Voltage	V_{CBO}	**-50**	Vdc
Emitter-Base VOltage	V_{EBO}	**-5**	Vdc
Collector Current-Continuous	I_C	**-2,0**	Adc

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Total Device Dissipation Alumina Substrate, (**1**) TA=25°C Derate above 25°C	P_D	**900** **7.25**	mW mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	**138**	°C/W
Junction and Storage, Temperature	$T_{J,Tstg}$	-55 to +150	°C

DEVICE MARKING

2SA1020=A1020

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Max	Unit

OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage (I_C=**-10** mAdc .I_B=0)	$V_{(BR)CEO}$	**-50**	-	Vdc
Collector Cutoff Current (V_{CB}=**-40**Vdc,I_E=0)	I_{CBO}	-	**-0.1**	**u**Adc
Emitter Cutoff Current (V_{EB}=**-5.0**Vdc,I_C=0)	I_{EBO}	-	**-0.1**	**u**Adc

1.Alumina=0.4 x 0.3 x 0.024 in. 99.5% alumina

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted) (Countinued)

Characteristics		Symbol	Min	Typ	Max	Unit
ON CHARACTERISTICS						
DC Current Gain (I_C=-500 mAdc, V_{CE}=-2.0 Vdc) (I_C=-1500 mAdc, V_{CE}=-2.0 Vdc)		h_{FE}(1) h_{FE}(2)	70 40	- -	240 -	- -
Collector-Emitter Saturation Voltage (I_C=-1000 mAdc, I_B=-50mAdc)		$V_{CE(sat)}$	-	-	-0.5	Vdc
Base-Emitter Saturation Voltage (I_C=-1000 mAdc, I_B=-50mAdc)		$V_{BE(sat)}$	-	-	-1.2	Vdc
Current-Gain-Bandwidth Product (I_C=-500 mAdc, V_{CE}=-2 Vdc)		f_T	100	-	-	MHz
Collector Output Capacitance V_{CB}=-10V, I_E=0, f= 1MHZ		Cob	-	-40	-	PF
Switching Time 20us I_{B2} I_{B1} $-I_{B1}=I_{B2}$=0.05A DUTY CYCLE≤1% INPUT OUTPUT 30Ω V_{CC}=-30V	Turn-on time	ton	-	0.1	-	us
	Storage time	t_{stg}	-	1.0	-	
	Fall time	t_f	-	0.1	-	

CLASSIFICATION OF h_{FE}

Rank	O	Y
Range	70-140	120-240

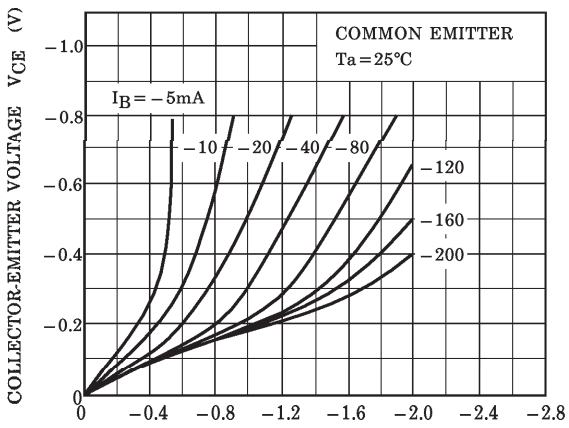


FIG1 COLLECTOR CURRENT I_C (A)

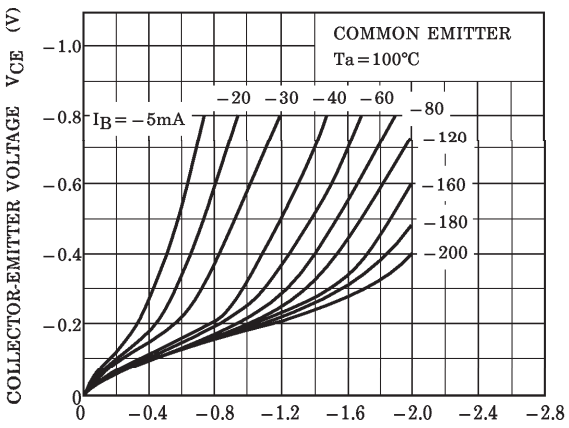


FIG2 COLLECTOR CURRENT I_C (A)

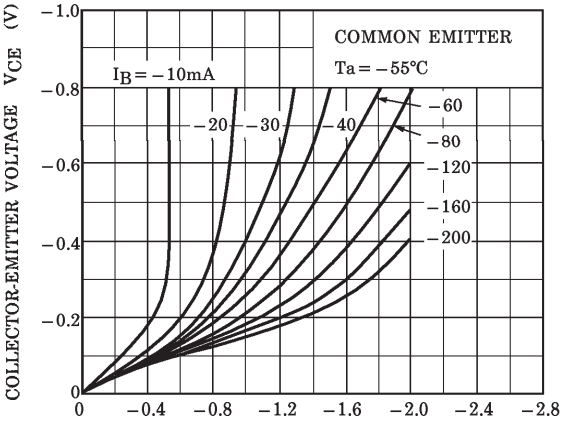


FIG3 COLLECTOR CURRENT I_C (A)

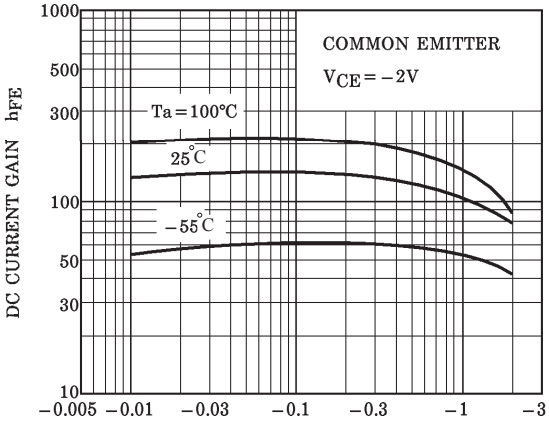


FIG4 COLLECTOR CURRENT I_C (A)

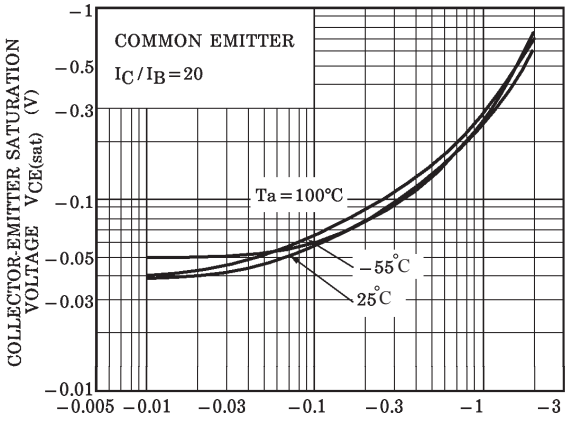


FIG5 COLLECTOR CURRENT I_C (A)

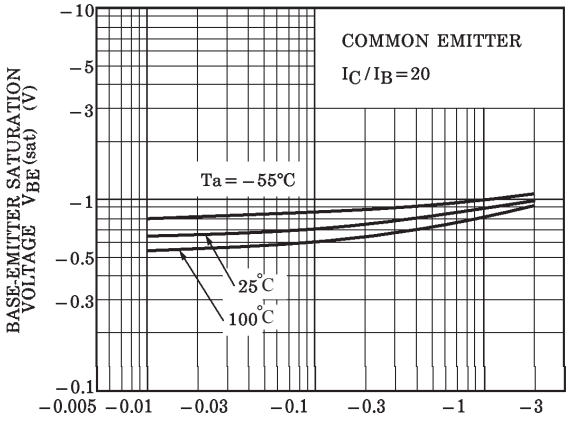


FIG6 COLLECTOR CURRENT I_C (A)

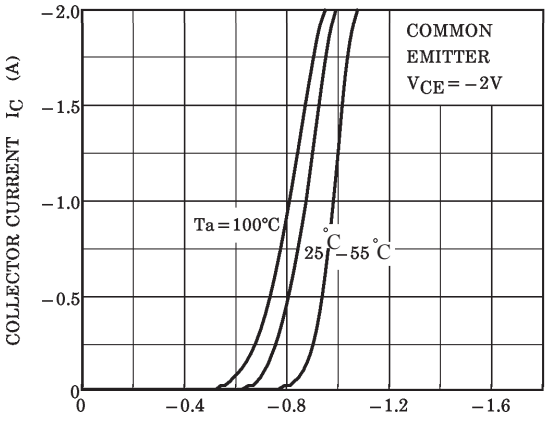


FIG7 BASE-EMITTER VOLTAGE V_{BE} (V)

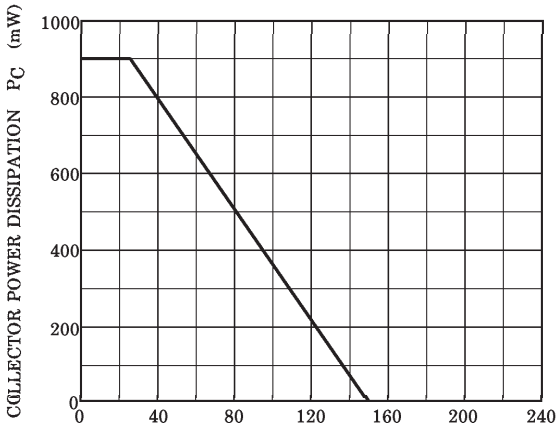


FIG8 AMBIENT TEMPERATURE Ta (°C)

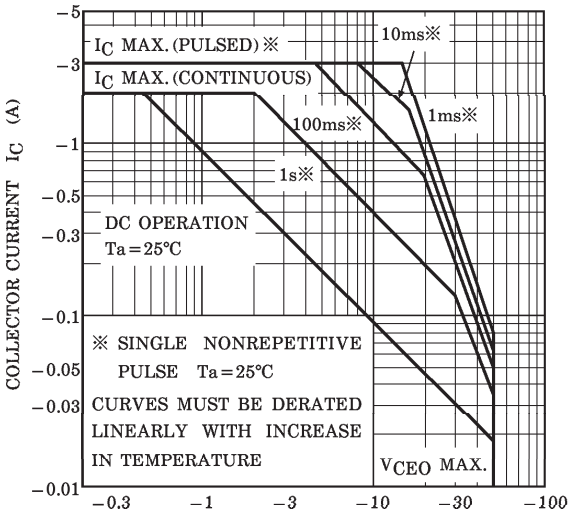
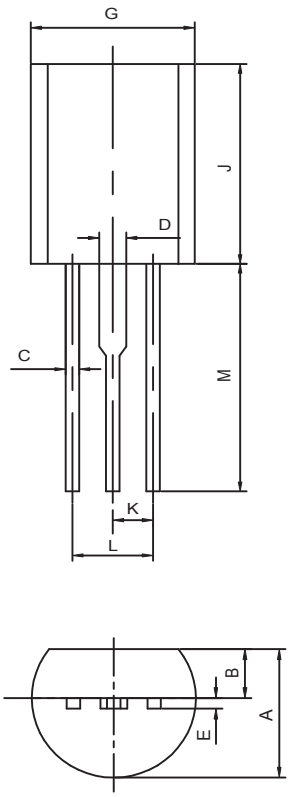


FIG9 COLLECTOR-EMITTER VOLTAGE V_{CE} (V)

TO-92MOD Outline Dimensions

unit:mm



TO-92MOD		
Dim	**Min**	**Max**
A	4.700	5.100
B	1.730	2.030
C	0.400	0.600
D	0.900	1.100
E	0.400	0.500
G	5.800	6.200
J	8.400	8..800
K	1.500TYP	
L	2.900	3.100
M	12.20	13.450