/ Descriptions

TO-92 NPN Silicon NPN transistor in a TO-92 Plastic Package.

/ Features

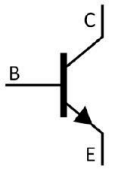
2SA1980

Low $V_{CE(sat)}$,low output capacitance, complementary pair with 2SA1980.

/ Applications

General small signal amplifier applications.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Collector PIN 3 Emitter

/ hFE Classifications & Marking

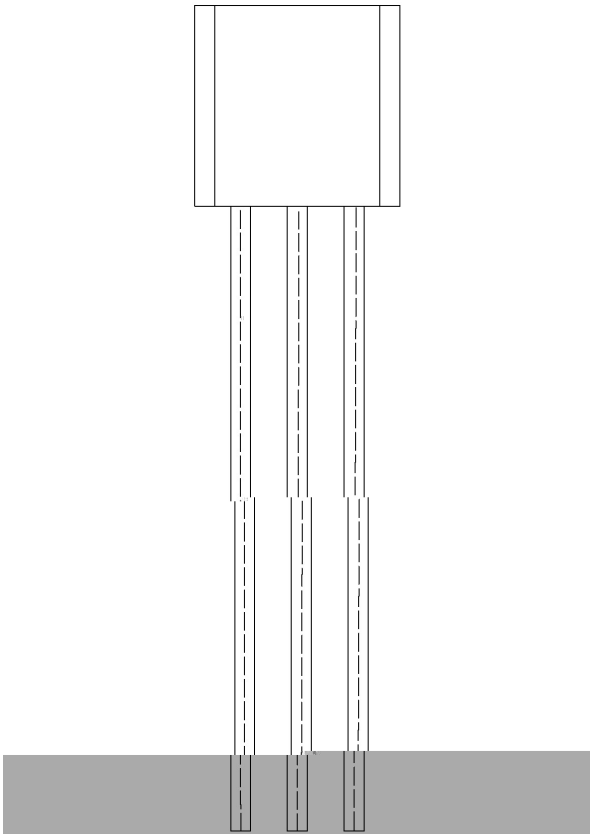
h_{FE} Classifications Symbol	R	Y	G	L
h_{FE} Range	70~140	120~240	200~400	300~700

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	60	V
Collector to Emitter Voltage	V_{CEO}	50	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current - Continuous	I_C	150	mA
Collector Power Dissipation	P_C	625	mW
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

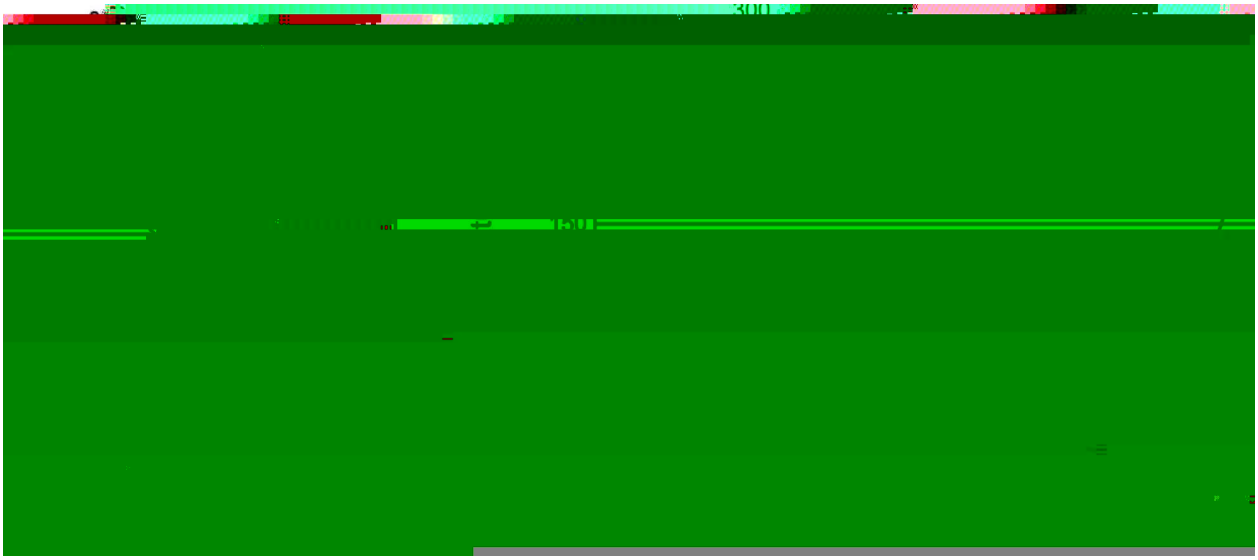
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	I_C=100μA I_E=0	60			V
Collector to Emitter Breakdown Voltage	V_{CEO}	I_C=10mA I_B=0	50			V
Emitter to Base Breakdown Voltage	V_{EBO}	I_E=10μA I_C=0	5.0			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=60V I_E=0			0.1	μA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=5.0V I_C=0			0.1	μA
DC Current Gain	h_{FE}	V_{CE}=6.0V I_C=2.0mA	70		700	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=100mA I_B=10mA			0.25	V
Transition Frequency	f_T	V_{CE}=10V I_C=1.0mA	80			MHz
Output Capacitance	C_{ob}	V_{CB}=10V I_E=0 f=1.0MHz		2.0	3.5	pF

Nois 24.18 re35gure 10(E(NET55.6208001 r0 Tc(V)Tj7)TjETBT0 7.02 273.84 279.9203)5.-0.0042 Tc(CE)Tj10.5 0 0

/ Electrical Characteristic Curve



( ) / Temperature Profile for Dip Soldering(Pb-Free)



				Note:
1	25 150	60 90sec;		1.Preheating:25~150 , Time:60~90sec.
2	255±5	5±0.5sec;		2.Peak Temp.:255±5 , Duration:5±0.5sec.
3	2 10 /sec.			3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

270±5	10±1 sec.	Temp:270±5	Time:10±1 sec

/ Packaging SPEC.

/ BULK

Package Type	Units					Dimension		(unit mm3)
	Units/Bag /	Bags/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Bag	Inner Box	Outer Box
TO-92	1,000	10	10,000	5	50,000	135×190	237×172×102	560×245×195
	1,000	10	10,000	10	100,000	135×190	237×172×102	560×245×375

/ AMMO

Package Type	Units					Dimension	(unit mm3)
	Units/tape /	Tape/Inner Box /	Rows/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Inner Box	Outer Box
TO-92	3,000	1	120	10	30,000	328×230×42	480×346×235 547×407×268

/ Notices