

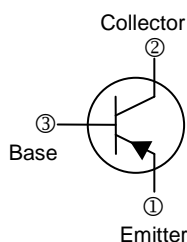
RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

## FEATURES

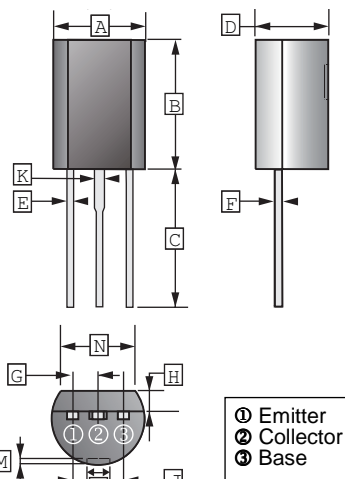
- Complementary to 2SC2235
- Power Amplifier Applications

## CLASSIFICATION OF $h_{FE}$

Product-Rank	2SA965-O	2SA965-Y
Range	80-160	120-240



## TO-92MOD



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.50	6.50	H	1.70	2.05
B	8.00	9.00	J	2.70	3.20
C	12.70	14.50	K	0.85	1.15
D	4.50	5.30	L	1.60 Max	
E	0.35	0.65	M	0.00	0.40
F	0.30	0.51	N	4.00 Min	
G	1.50 TYP.				

## ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	$V_{CBO}$	-120	V
Collector to Emitter Voltage	$V_{CEO}$	-120	V
Emitter to Base Voltage	$V_{EBO}$	-5	V
Collector Current - Continuous	$I_C$	-0.8	A
Collector Power Dissipation	$P_C$	0.9	W
Thermal Resistance, Junction To Ambient	$R_{\theta JA}$	139	$^\circ\text{C/W}$
Junction, Storage Temperature	$T_J, T_{STG}$	150, -55~150	$^\circ\text{C}$

## ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	-120	-	-	V	$I_C = -1\text{mA}, I_E = 0$
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	-120	-	-	V	$I_C = -10\text{mA}, I_B = 0$
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	-5	-	-	V	$I_E = -1\text{mA}, I_C = 0$
Collector Cut-Off Current	$I_{CBO}$	-	-	-0.1	$\mu\text{A}$	$V_{CB} = -120\text{V}, I_E = 0$
Emitter Cut-Off Current	$I_{EBO}$	-	-	-0.1	$\mu\text{A}$	$V_{EB} = -5\text{V}, I_C = 0$
DC Current Gain	$h_{FE}$	80	-	240		$V_{CE} = -5\text{V}, I_C = -100\text{mA}$
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	-1	V	$I_C = -500\text{mA}, I_B = -50\text{mA}$
Base to Emitter Saturation Voltage	$V_{BE}$	-	-	-1	V	$V_{CE} = -5\text{V}, I_C = -0.5\text{A}$
Transition Frequency	$f_T$	-	120	-	MHz	$V_{CE} = -5\text{V}, I_C = -100\text{mA}$
Collector Output Capacitance	$C_{ob}$	-	-	40	pF	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$