

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

## FEATURES

- Low collector-emitter saturation voltage  $V_{CE(sat)}$
- For low-frequency output amplification
- High Transition Frequency

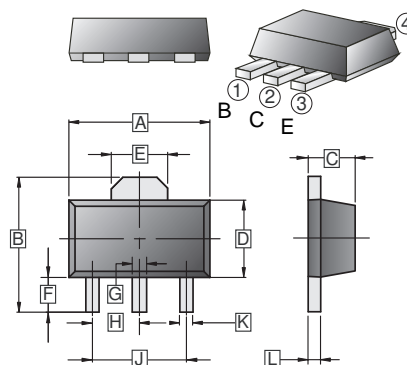
## CLASSIFICATION OF $h_{FE1}$

Product	2SA1664-O	2SA1664-Y
Range	100~200	160~320
Marking	RO	RY

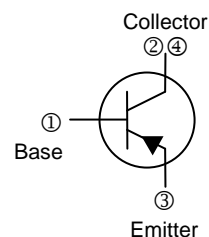
## PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-89	1K	7' inch

### SOT-89



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.40	4.60	G	0.40	0.58
B	3.94	4.25	H	1.50	TYP
C	1.40	1.60	J	3.00	TYP
D	2.30	2.60	K	0.32	0.52
E	1.50	1.70	L	0.35	0.44
F	0.89	1.20			



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

Parameter	Symbol	Rated	Unit
Collector-Base Voltage	$V_{CBO}$	-35	V
Collector-Emitter Voltage	$V_{CEO}$	-30	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current -Continuous	$I_C$	-0.8	A
Collector Power Dissipation	$P_C$	500	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	250	$^\circ\text{C}/\text{W}$
Junction & Storage Temperature	$T_J, T_{STG}$	150, -55~150	$^\circ\text{C}$

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-base breakdown voltage	$V_{(BR)CBO}$	-35	-	-	V	$I_C = -1\text{mA}, I_E = 0$
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	-30	-	-	V	$I_C = -10\text{mA}, I_B = 0$
Emitter-base breakdown voltage	$V_{(BR)EBO}$	-5	-	-	V	$I_E = -1\text{mA}, I_C = 0$
Collector cut-off current	$I_{CBO}$	-	-	-100	nA	$V_{CB} = -35\text{V}, I_E = 0$
Emitter cut-off current	$I_{EBO}$	-	-	-100	nA	$V_{EB} = -5\text{V}, I_C = 0$
DC current gain	$h_{FE1}$	100	-	320		$V_{CE} = -1\text{V}, I_C = -100\text{mA}$
	$h_{FE2}$	35	-	-		$V_{CE} = -1\text{V}, I_C = -700\text{mA}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	-0.7	V	$I_C = -0.5\text{A}, I_B = -20\text{mA}$
Base-emitter voltage	$V_{BE}$	-0.5	-	-0.8	V	$V_{CE} = -1\text{V}, I_C = -10\text{mA}$
Transition frequency	$f_T$	-	120	-	MHZ	$V_{CE} = -5\text{V}, I_C = -10\text{mA}$
Output Capacitance	$C_{OB}$	-	19	-	pF	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$