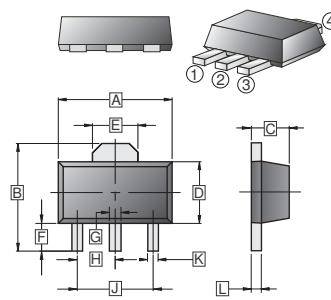


RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

## DESCRIPTION

The 2SD1766 is suited for the output stage of 0.5W audio, voltage regulator, and relay driver.

## SOT-89

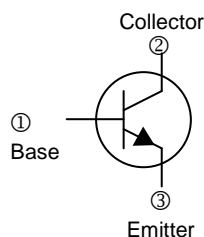


## CLASSIFICATION OF $h_{FE}$

Product Rank	2SD1766-P	2SD1766-Q	2SD1766-R
Range	82~180	120~270	180~390
Marking	DBP	DBQ	DBR

## PACKAGE INFORMATION

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



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	Ratings	Unit
Collector-Base Voltage	$V_{CBO}$	40	V
Collector-Emitter Voltage	$V_{CEO}$	32	V
Emitter-Base Voltage	$V_{EBO}$	5.0	V
Collector Current -Continuous	$I_C$	2.0	A
Total Power Dissipation	$P_D$	0.5	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-base breakdown voltage	$V_{(BR)CBO}$	40	-	-	V	$I_C = 50 \mu\text{A}, I_E = 0$
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	32	-	-	V	$I_C = 1 \text{ mA}, I_B = 0$
Emitter-base breakdown voltage	$V_{(BR)EBO}$	5.0	-	-	V	$I_E = 50 \mu\text{A}, I_C = 0$
Collector cut-off current	$I_{CBO}$	-	-	1	$\mu\text{A}$	$V_{CB} = 20 \text{ V}, I_E = 0$
Emitter cut-off current	$I_{EBO}$	-	-	1	$\mu\text{A}$	$V_{EB} = 4 \text{ V}, I_C = 0$
DC current gain	$h_{FE}$	82	-	390		$V_{CE} = 3 \text{ V}, I_C = 0.5 \text{ A}$
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	-	0.8	V	$I_C = 2 \text{ A}, I_B = 0.2 \text{ A}$
Transition frequency	$f_T$	-	100	-	MHz	$V_{CE} = 5 \text{ V}, I_E = 50 \text{ mA}, f = 100 \text{ MHz}$
Output Capacitance	$C_{OB}$	-	30	-	pF	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$

**CHARACTERISTIC CURVES**

