

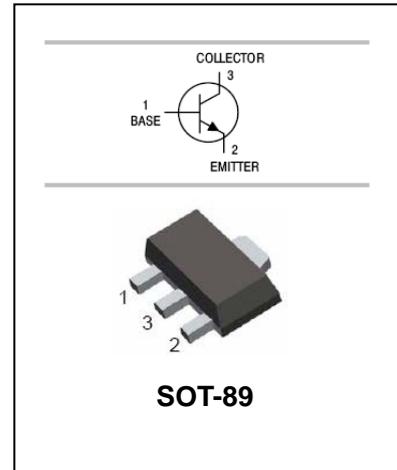
## LOW FREQUENCY TRANSISTER (20V, 3A)

## 2SD2150

### FEATURES

- Low  $V_{CE(sat)}$  :  $V_{CE(sat)} = 0.2V$  (Typ.)  
( $I_C/I_B = 2A/0.1A$ ).
- Excellent current gain characteristics.
- Complements the 2SB1424.

HF



### Structure

Epitaxial planar type NPN silicon transistor.

### ORDERING INFORMATION

Type No.	Marking	Package Code
2SD2150	CFQ/ CFR/ CFS	SOT-89

### MAXIMUM RATING @ $T_a = 25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	40	V
$V_{CEO}$	Collector-Emitter Voltage	20	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current -Continuous	3 5	A(DC) A(Pulse) <sup>*1</sup>
$P_C$	Collector power dissipation	0.5	W
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 to +150	$^\circ\text{C}$

\*1 Single pulse  $P_w = 10\text{ms}$

**LOW FREQUENCY TRANSISTER (20V, 3A)**

**2SD2150**

**ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified**

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=50\mu A, I_E=0$	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	20			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=50\mu A, I_C=0$	6			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=30V, I_E=0$			0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=5V, I_C=0$			0.1	$\mu A$
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C/I_B=2A/0.1A$		0.2	0.5	V
DC current transfer ratio	$h_{FE}$	$V_{CE}=2V, I_C=0.1A$	120		560	$h_{FE}$
Transition frequency	$f_T$	$V_{CE}=2V, I_E=-0.5A,$ $f=100MHz$		290		MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10V, f=1MHz, I_E=0A$		25		pF

\*Measured using pulse current

**CLASSIFICATION OF  $h_{FE}$**

Rank	Q	R	S
Range	120-270	180-390	270-560

**LOW FREQUENCY TRANSISTER (20V, 3A)**

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**TYPICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified**

● Electrical characteristic curves

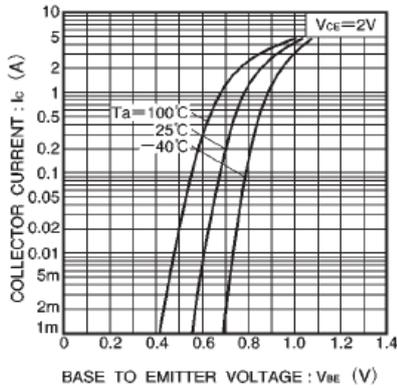


Fig.1 Grounded emitter propagation characteristics

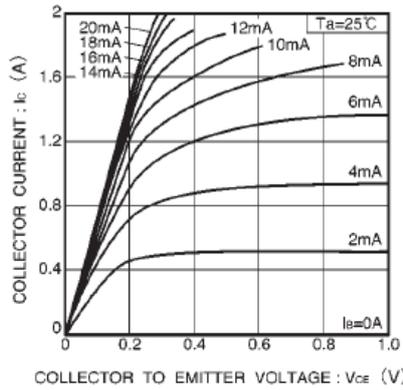


Fig.2 Grounded emitter output characteristics ( I )

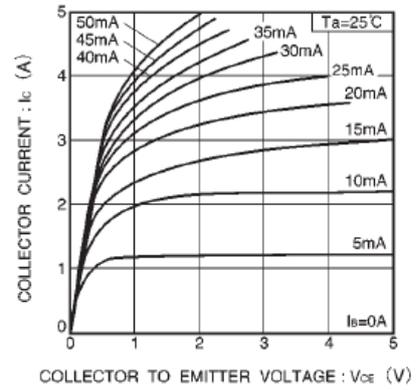


Fig.3 Grounded emitter output characteristics ( II )

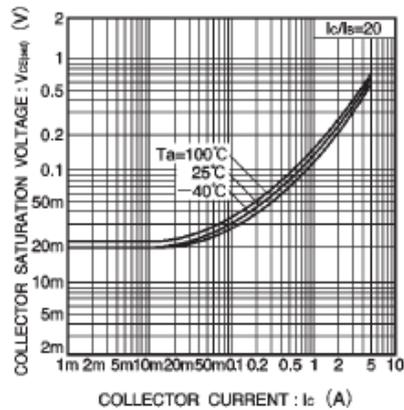


Fig.7 Collector-emitter saturation voltage vs. collector current ( III )

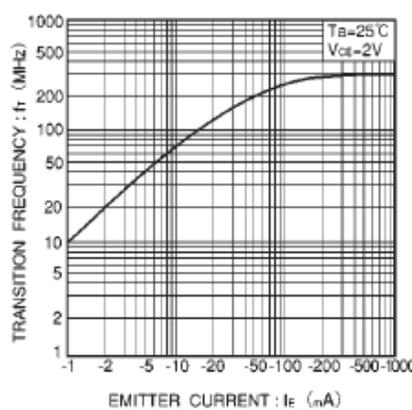


Fig.8 Gain bandwidth product vs. emitter current

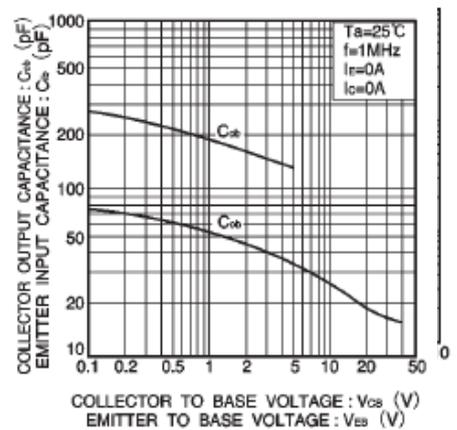


Fig.9 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

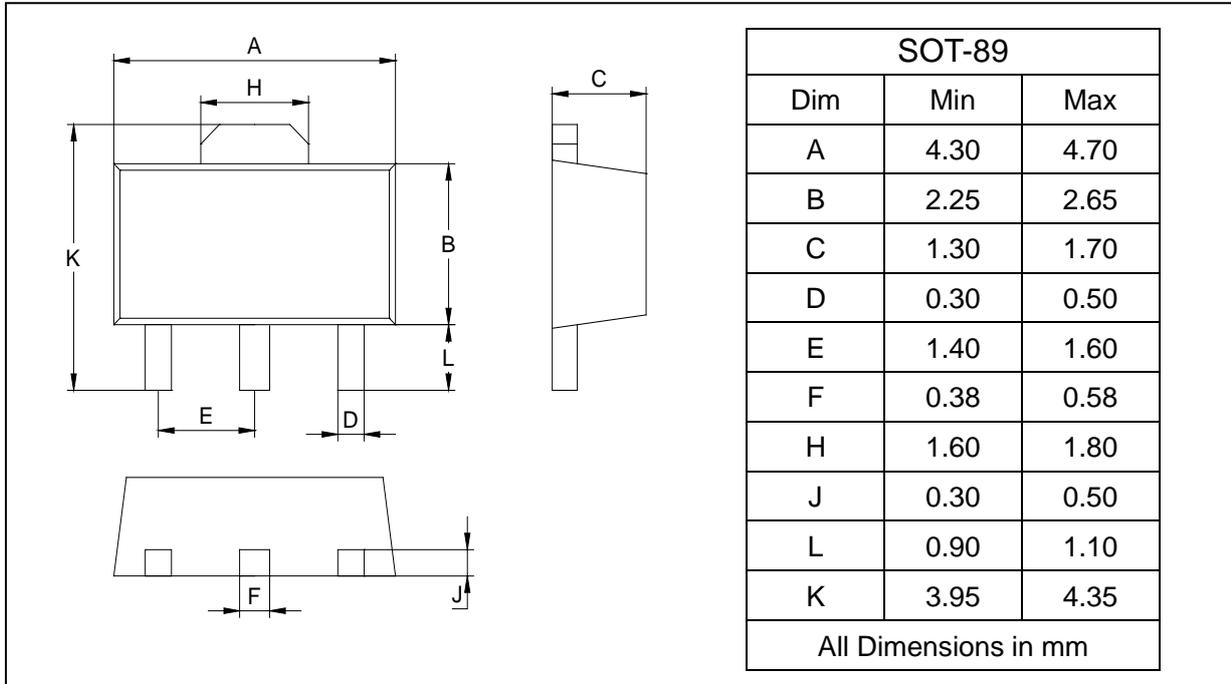
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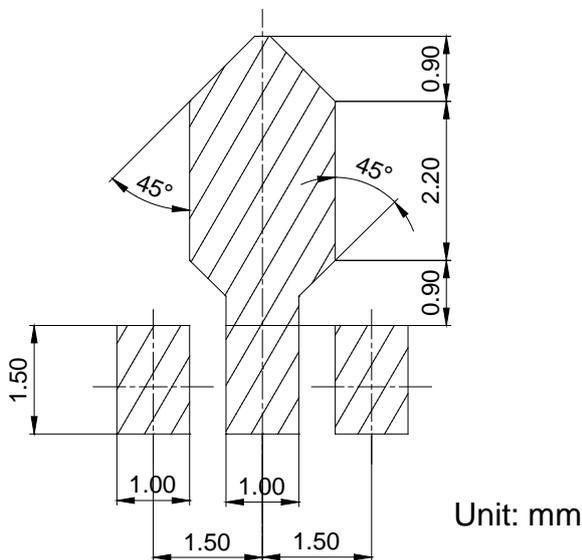
**PACKAGE OUTLINE**

Plastic surface mounted package

SOT-89



**SOLDERING FOOTPRINT**



**PACKAGE INFORMATION**

Device	Package	Shipping
2SD2150	SOT-89	1000 pcs / Tape & Reel