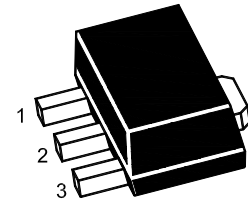


# ST 2SD2150U

## NPN Silicon Epitaxial Planar Transistor

Low frequency transistor



1.Base 2.Collector 3.Emitter  
SOT-89 Plastic Package

### Absolute Maximum Ratings ( $T_a = 25\text{ }^\circ\text{C}$ )

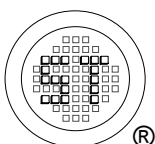
Parameter	Symbol	Value	Unit
Collector Base Voltage	$V_{CBO}$	40	V
Collector Emitter Voltage	$V_{CEO}$	20	V
Emitter Base Voltage	$V_{EBO}$	6	V
Collector Current - DC	$I_C$	3	A
Collector Current - Pulse <sup>1)</sup>	$I_{CP}$	5 <sup>1)</sup>	A
Total Power Dissipation	$P_{tot}$	0.5 2 <sup>2)</sup>	W
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_S$	- 55 to + 150	$^\circ\text{C}$

<sup>1)</sup> Single pulse  $P_w = 10\text{ ms}$ .

<sup>2)</sup> Mounted on a 40 X 40 X 0.7 mm ceramic substrate.

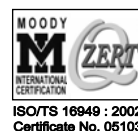
### Characteristics at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $V_{CE} = 2\text{ V}$ , $I_C = 100\text{ mA}$	Current Gain Group R	$h_{FE}$	180	-	390	-
	S	$h_{FE}$	270	-	560	-
Collector Base Breakdown Voltage at $I_C = 50\text{ }\mu\text{A}$	$V_{(BR)CBO}$	40	-	-	V	
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CEO}$	20	-	-	V	
Emitter Base Breakdown Voltage at $I_E = 50\text{ }\mu\text{A}$	$V_{(BR)EBO}$	6	-	-	V	
Collector Cutoff Current at $V_{CB} = 30\text{ V}$	$I_{CBO}$	-	-	100	nA	
Emitter Cutoff Current at $V_{EB} = 5\text{ V}$	$I_{EBO}$	-	-	100	nA	
Collector Emitter Saturation Voltage at $I_C = 2\text{ A}$ , $I_B = 100\text{ mA}$	$V_{CE(sat)}$	-	-	0.5	V	
Transition Frequency at $V_{CE} = 2\text{ V}$ , $-I_E = 500\text{ mA}$ , $f = 100\text{ MHz}$	$f_T$	-	290	-	MHz	
Collector Output Capacitance at $V_{CE} = 10\text{ V}$ , $I_E = 0\text{ A}$ , $f = 1\text{ MHz}$	$C_{ob}$	-	25	-	pF	



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Dated : 15/05/2007

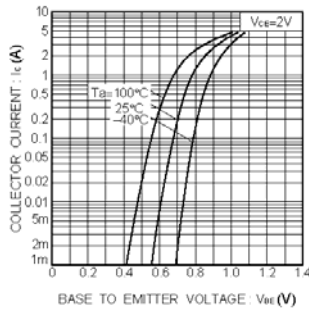


Fig.1 Grounded emitter propagation characteristics

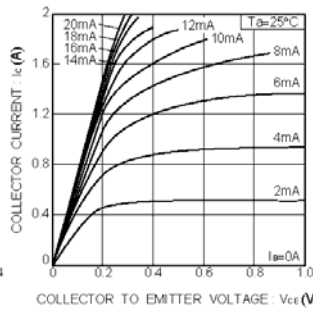


Fig.2 Grounded emitter output characteristics (I)

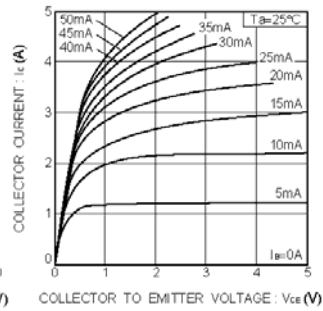


Fig.3 Grounded emitter output characteristics (II)

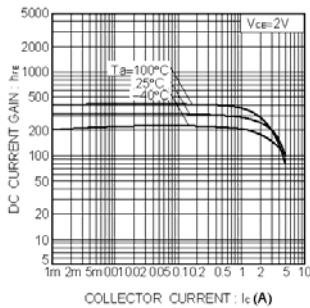


Fig.4 DC current gain vs. collector current

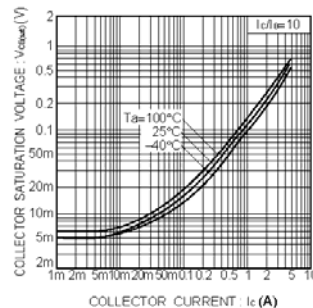


Fig.5 Collector-emitter saturation voltage vs. collector current (I)

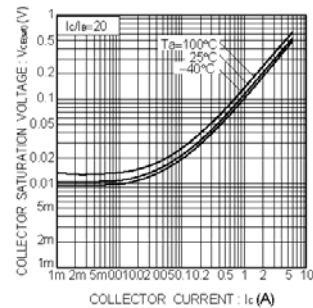


Fig.6 Collector-emitter saturation voltage vs. collector current (II)

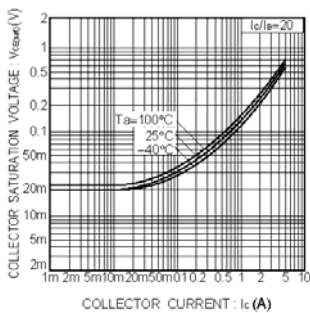


Fig.7 Collector-emitter saturation voltage vs. collector current (III)

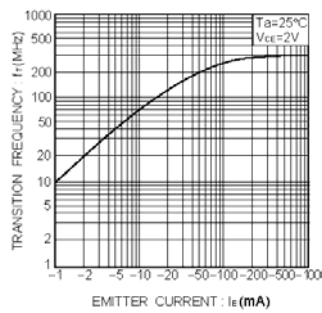


Fig.8 Gain bandwidth product vs. emitter current

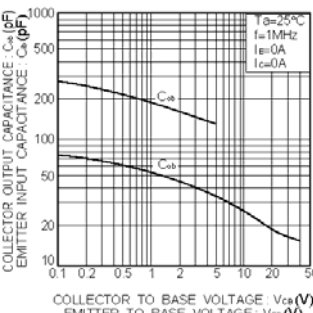
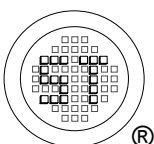


Fig.9 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage



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ISO/TS 16949 : 2002  
Certificate No. 05103



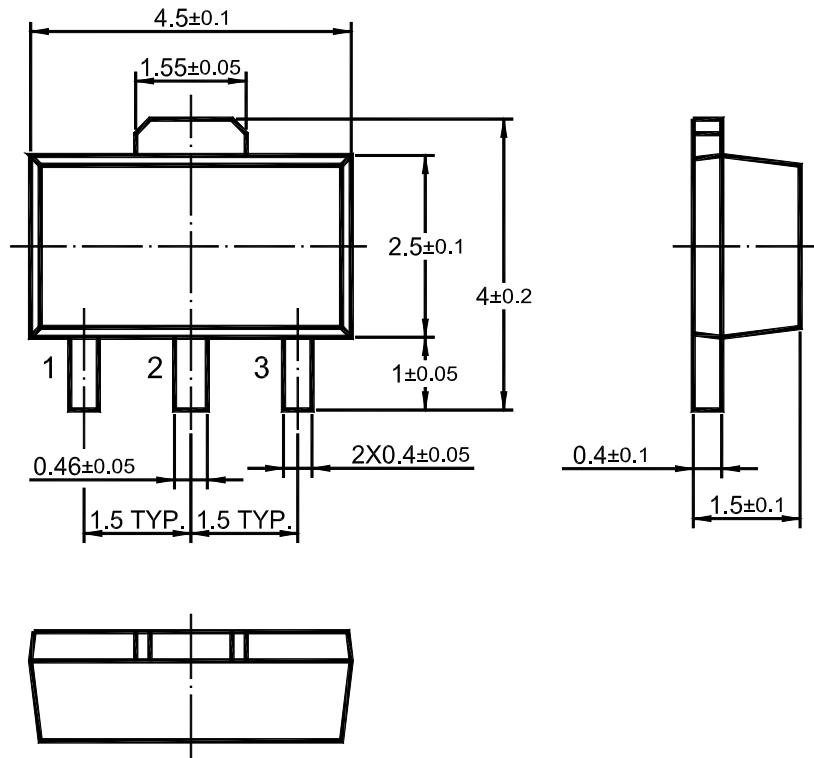
ISO 14001:2004  
Certificate No. 71116



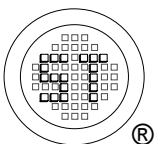
ISO 9001:2000  
Certificate No. 0506098

# ST 2SD2150U

## SOT-89 PACKAGE OUTLINE



Dimensions in mm



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