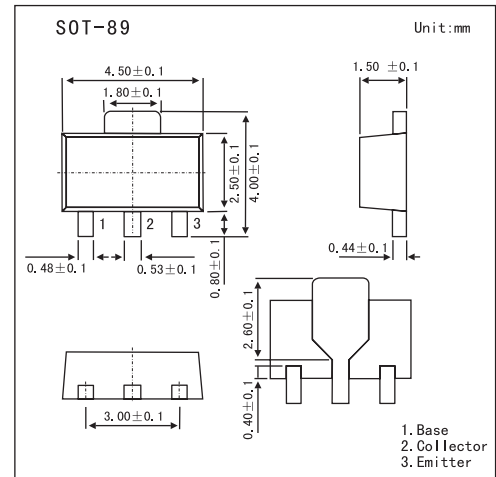


## NPN Silicon Epitaxial Transistor

## 2SD1615

## ■ Features

- World Standard Miniature Package.
- Low  $V_{CE(sat)}$   $V_{CE(sat)} = 0.15\text{ V}$

■ Absolute Maximum Ratings  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	60	V
Collector-emitter voltage	$V_{CE0}$	50	V
Emitter-base voltage	$V_{EB0}$	6	V
Collector current (DC)	$I_C$	1	A
Collector Current (pulse) *1	$I_C$	2	A
Total power dissipation at $25^\circ\text{C}$ Ambient Temperature *2	$P_T$	2.0	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

\* 1Pulse Test  $PW \leq 10\text{ms}$ , Duty Cycle  $\leq 50\%$ .

\*2 When mounted on ceramic substrate of  $16\text{ cm}^2 \times 0.7\text{ mm}$

■ Electrical Characteristics  $T_a = 25^\circ\text{C}$ 

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 60\text{ V}$ , $I_E = 0\text{ A}$			100	nA
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 6.0\text{ V}$ , $I_C = 0\text{ A}$			100	nA
DC current gain *	$h_{FE}$	$V_{CE} = 2.0\text{ V}$ , $I_C = 100\text{ mA}$	135	290	600	
Collector saturation voltage *	$V_{CE(sat)}$	$I_C = 1\text{ A}$ , $I_B = 50\text{ mA}$		0.15	0.3	V
Base saturation voltage *	$V_{BE(sat)}$	$I_C = 1\text{ A}$ , $I_B = 50\text{ mA}$		0.9	1.2	V
Base-emitter voltage *	$V_{BE}$	$V_{CE} = 2.0\text{ V}$ , $I_C = 50\text{ mA}$	600		700	mV
Gain bandwidth product	$f_T$	$V_{CE} = 2.0\text{ V}$ , $I_E = -100\text{ mA}$	80	160		MHz
Output capacitance	$C_{ob}$	$V_{CB} = 10\text{ V}$ , $I_E = 0$ , $f = 1.0\text{ MHz}$		19		pF

\* Pulsed:  $PW \leq 350\text{ }\mu\text{s}$ , duty cycle  $\leq 2\%$

■  $h_{FE}$  Classification

Marking	GM	GL	GK
$h_{FE}$	135~270	200~400	300~600