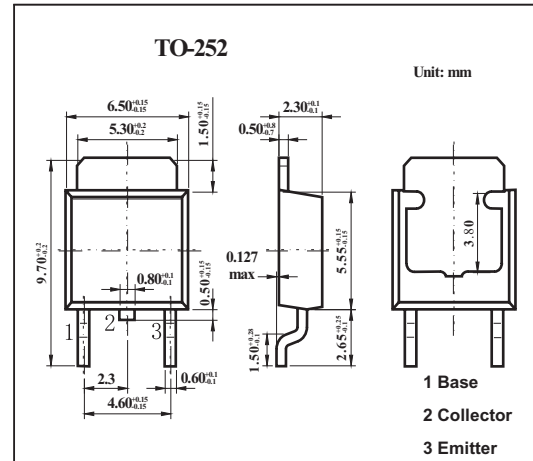


## Silicon Power Transistors

## 2SA1615-Z

## ■ Features

- Large current capacity.
- High hFE and low collector saturation voltage.

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	$V_{CB0}$	-30	V
Collector-emitter voltage	$V_{CEO}$	-20	V
Emitter-base voltage	$V_{EBO}$	-10	V
Collector current	$I_C$	-10	A
Collector current pulse	$I_{cp}^*$	-15	A
Base current	$I_B$	-0.5	A
Total power dissipation	$P_T$	1.0	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

\*  $PW \leq 10$  ms, duty cycle  $\leq 50\%$

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

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = -20V, I_E = 0$			-1	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = -8V, I_C = 0$			-1	$\mu\text{A}$
DC current gain *	hFE	$V_{CE} = -2V, I_C = -0.5A$	200		600	
		$V_{CE} = -2.0V, I_C = -4.0A$	160			
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = -4A, I_B = -0.05A$		-0.2	-0.25	V
Base saturation voltage *	$V_{BE(sat)}$	$I_C = -4A, I_B = -0.05A$		-0.9	-1.2	
Gain bandwidth product	$f_T$	$V_{CE} = -5V, I_E = 1.5A$		180		MHz
Output capacitance	$C_{ob}$	$V_{CB} = -10V, I_E = 0, f = 1.0\text{MHz}$		220		pF
Turn-on time	$t_{on}$	$I_C = -5.0A, I_{B1} = -I_{B2} = 0.125A,$		80		ns
Storage time	$t_{stg}$	$R_L = 2.0 \Omega, V_{CC} = -10V$		300		ns
Fall time	$t_f$			60		ns

\* Pulse test:  $t_p \leq 350 \mu\text{s}; d \leq 0.02$ .

## ■ hFE Classification

Marking	L	K
hFE	200~400	300~600