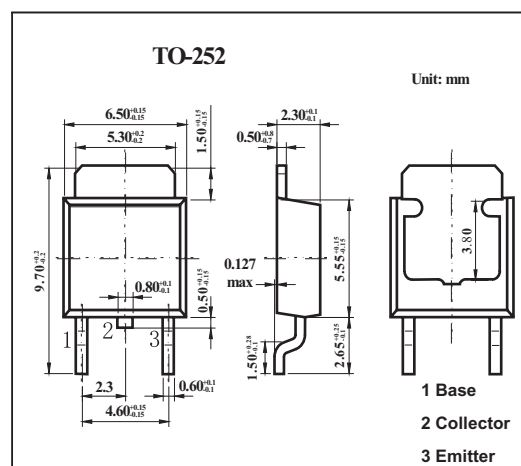


NPN Silicon Epitaxial Transistor

2SD1584-Z

■ Features

- Low $V_{CE(sat)}$.
- High h_{FE} .

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

Parameter	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	60	V
Collector-emitter voltage	V_{CEO}	60	V
Emitter-base voltage	V_{EBO}	7	V
Collector current (DC)	I_C	3	A
Collector Current (pulse) *1	I_{CP}	5	A
Total power dissipation $T_a = 25^\circ\text{C}$ *2	P_T	2	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

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

*2 when mounted on ceramic substrate of $7.5\text{cm}^2 \times 0.7\text{mm}$

2SD1584-Z■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 60\text{ V}, I_E = 0$			10	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 5\text{ V}, I_C = 0$			10	μA
DC current gain *	h_{FE}	$V_{CE} = 5\text{ V}, I_C = 50\text{ mA}$	600	1650		
		$V_{CE} = 5\text{ V}, I_C = 500\text{ mA}$	800	1800	3200	
		$V_{CE} = 5\text{ V}, I_C = 3\text{ A}$	500	1400		
Collector saturation voltage *	$V_{CE(sat)}$	$I_C = 2.0\text{ A}, I_B = 20\text{ mA}$		0.25	0.5	V
Base saturation voltage *	$V_{BE(sat)}$	$I_C = 2.0\text{ A}, I_B = 20\text{ mA}$		0.8	1.2	V
Gain bandwidth product	f_T	$V_{CE} = 5\text{ V}, I_E = -100\text{ mA}$	50	120		MHz
Output capacitance	C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0, f = 1.0\text{ MHz}$		20		pF
Turn-on time	t_{on}	$I_C = 2\text{ A}, V_{CC} = 10\text{ V}$ $I_{B1} = -I_{B2} = 20\text{ mA}$ $R_L = 5\Omega$		0.9		μs
Storage time	t_{stg}			2.6		μs
Fall time	t_f			1		μs

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

Marking	M	L	K
h_{FE}	800~1600	1000~2000	1600~3200