



MJE13003

**NPN SILICON TRANSISTOR**

**FEATURES**

Power dissipation

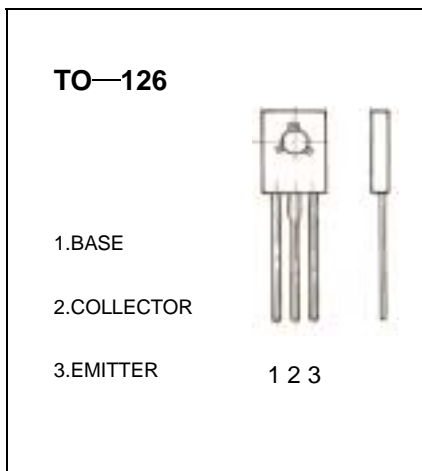
$$P_{CM} : 1.25 \text{ W} \quad (T_{amb}=25^\circ\text{C})$$

Collector current

$$I_{CM} : 1.5 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO} : 700 \text{ V}$$



**ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)**

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=1000 \mu\text{A}, I_E=0$	700			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10 \text{ mA}, I_B=0$	400			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=1000 \mu\text{A}, I_C=0$	9			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=700 \text{ V}, I_E=0$			1000	$\mu\text{A}$
Collector cut-off current	$I_{CEO}$	$V_{CE}=400 \text{ V}, I_B=0$			500	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=9 \text{ V}, I_C=0$			1000	$\mu\text{A}$
DC current gain(note)	$H_{FE(1)}$	$V_{CE}=10 \text{ V}, I_C=150 \text{ mA}$	8		40	
	$H_{FE(2)}$	$V_{CE}=10 \text{ V}, I_C=0.5 \text{ mA}$	5			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=1000\text{mA}, I_B=250 \text{ mA}$			1	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=1000\text{mA}, I_B=250\text{mA}$			1.2	V
Base-emitter voltage	$V_{BE}$	$I_E=2000 \text{ mA}$			3	V
Transition frequency	$f_T$	$V_{CE}=10\text{V}, I_C=100\text{mA}$ $f=1\text{MHz}$	5			MHz
Fall time	$t_f$	$I_C=1\text{A}, I_{B1}=-I_{B2}=0.2\text{A}$			0.5	$\mu\text{s}$
Storage time	$t_s$	$V_{CC}=100\text{V}$			2.5	$\mu\text{s}$

**CLASSIFICATION OF  $H_{FE(1)}$**

Rank						
Range	8-15	15-20	20-25	25-30	30-35	35-40