



MJE13003

NPN SILICON TRANSISTOR

FEATURES

Power dissipation

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

Collector current

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

Collector-base voltage

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

TO—126

1.BASE

2.COLLECTOR

3.EMITTER

1 2 3

ELECTRICAL CHARACTERISTICS ($T_{amb}=25^\circ\text{C}$ 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	μA
Collector cut-off current	I_{CEO}	$V_{CE} = 400 \text{ V}$, $I_B = 0$			500	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 9 \text{ V}$, $I_C = 0$			1000	μA
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	μs
Storage time	t_s	$V_{CC} = 100 \text{ V}$			2.5	μs

CLASSIFICATION OF $H_{FE(1)}$

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