



TO-18 Plastic-Encapsulate Transistors

HR13003

TRANSISTOR (NPN)

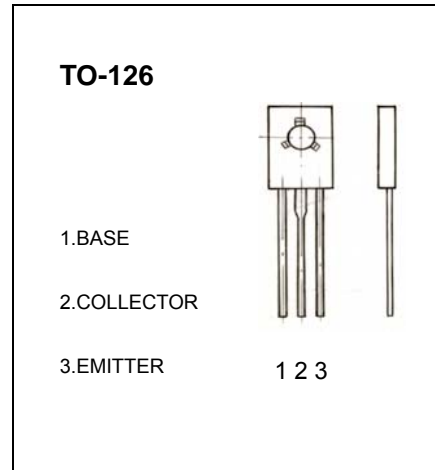
FEATURES

High total power dissipation. ($P_c=1.25W$)

MARKING:MJE13003

MAXIMUM RATINGS ($T_A=25^\circ C$ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	600	V
V_{CEO}	Collector-Emitter Voltage	480	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	1	A
P_C	Collector Dissipation	1.25	W
T_J, T_{stg}	Junction and Storage Temperature	-55-150	$^\circ C$



ELECTRICAL CHARACTERISTICS ($T_{amb}=25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	600			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	480			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu A, I_C=0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB}=600V, I_E=0$			100	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=6V, I_C=0$			100	μA
DC current gain	h_{FE1}	$V_{CE}=10V, I_C=250\mu A$	5			
	h_{FE2}	$V_{CE}=10V, I_C=200mA$	9		40	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=200mA, I_B=40mA$			0.8	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=200mA, I_B=40mA$			1.2	V
Transition frequency	f_T	$V_{CE}=10V, I_C=100mA$ $f=1MHz$	5			MHz
Fall time	t_f	$I_C=1A, I_{B1}=-I_{B2}=0.2A$			0.8	μs
Storage time	t_s	$V_{CC}=100V$			3.5	μs

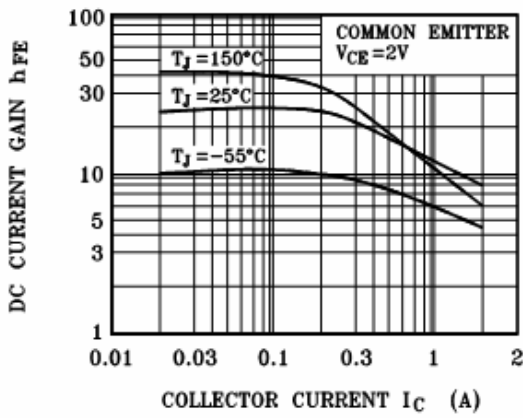
CLASSIFICATION OF h_{FE2}

Rank						
Range	9-15	15-20	20-25	25-30	30-35	35-40

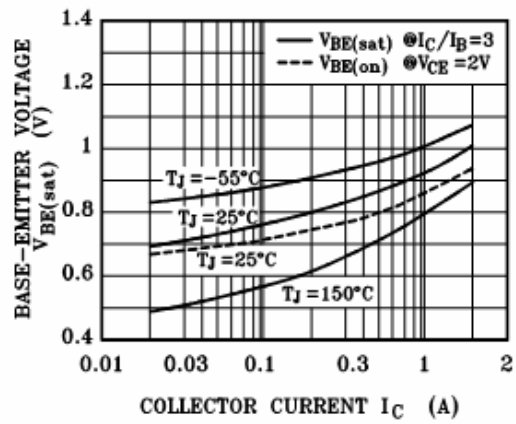
Typical Characteristics

HR13003

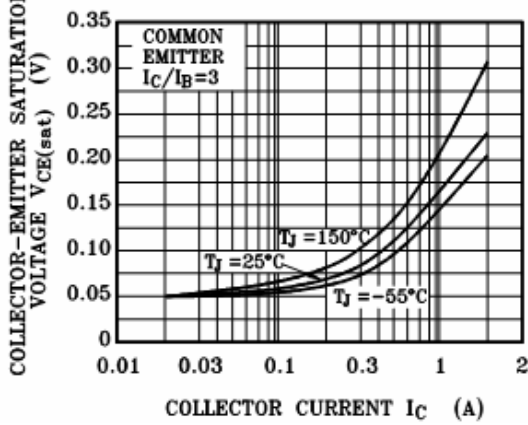
DC CURRENT GAIN



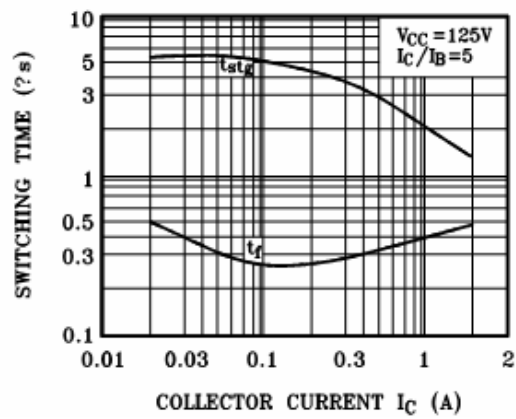
$V_{BE(sat)} - I_C$



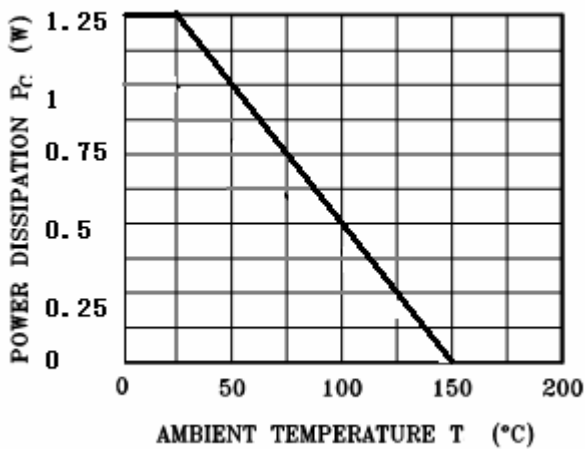
$V_{CE(sat)} - I_C$



SWITCHING CHARACTERISTIC



$P_C - T_a$



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