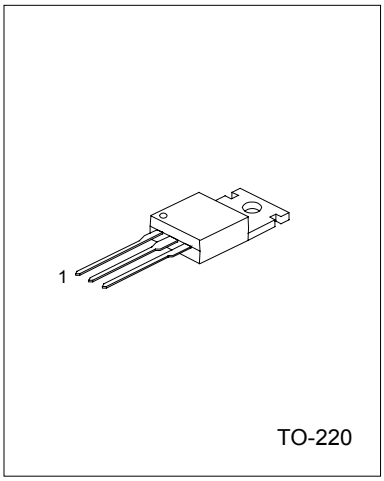
UTC MJE13003 NPN EPITAXIAL SILICON TRANSISTOR

SILICON NPN TRIPLE DIFFUSED MESA TYPE



1: BASE 2: COLLECTOR 3: EMITTER

APPLICATIONS

* Electronic transformers, power swiching circuit

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATING	UNIT
Collector-base voltage	V_{CBO}	700	V
Collector-emitter voltage	V_{CEO}	400	V
Emitter-base voltage	V_{EBO}	9	V
Collector current	Ic	1.5	A
Collector power dissipation	Pc	40	W
Junction Temperature	$T_{(Vj)}$	150	°C
Storage Temperature	T_{STG}	-55 ~ +150	°C

ELECTRICAL CHARACTERISTICS (T_C=25°C)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-emitter sustaining voltage	$V_{CEO(sus)}$	I_C=10mA, I_B=0	400			V
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_E=0, I_C=1mA	700			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=1mA, I_C=0	9			V
Collector cut-off current	I_{CBO}	V_{CB}=700V, I_E=0			100	μA
Collector-emitter cut off current	I_{CEO}	V_{CE}=400V, I_B=0			50	μA
Emitter-base cut-off current	I_{EBO}	V_{EB}=7V, I_C=0			10	μA
Small-signal current gain	h_{FE}	V_{CE}=10V, I_C=0.5A	8		40	
Collector-emitter saturation voltage	V_{CE}(sat1) V_{CE}(sat2)	I_C=1.5A, I_B=0.5A I_C=0.5A, I_B=0.1A			3 0.8	V
Base-emitter saturation voltage	V_{BE}(sat)	I_C=0.5A, I_B=0.1A			1	V
Fall time	tf	I_C=1A			0.7	μS
Storage time	ts	I_{B1}=-1 I_{B2}=0.2A			4	μS
Frequency characteristics	f_T	V_{CE}=10V, I_C=0.1A, f=1MHz	4			MHz

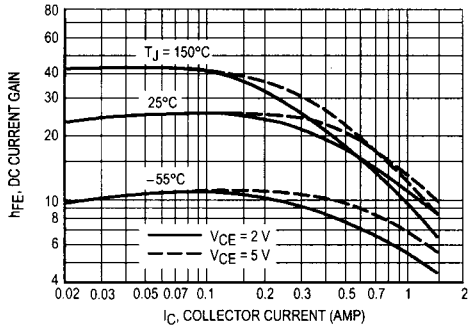


Figure 1. DC Current Gain

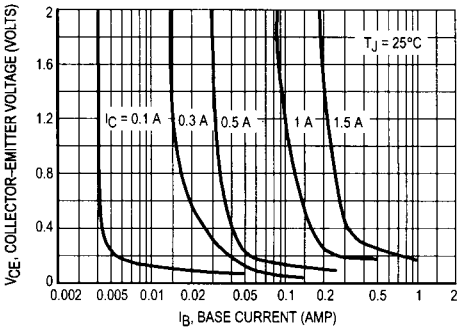


Figure 2. Collector Saturation Region

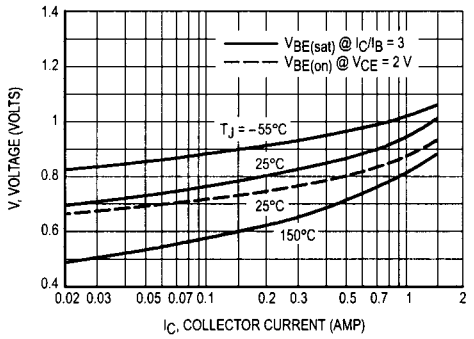


Figure 3. Base–Emitter Voltage

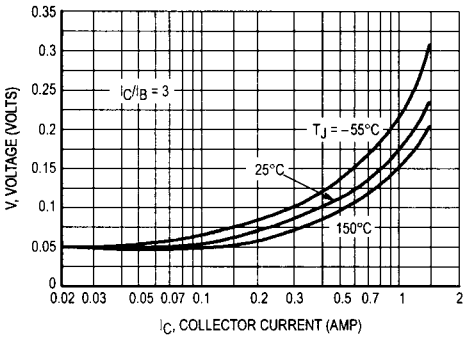


Figure 4. Collector–Emitter Saturation Region

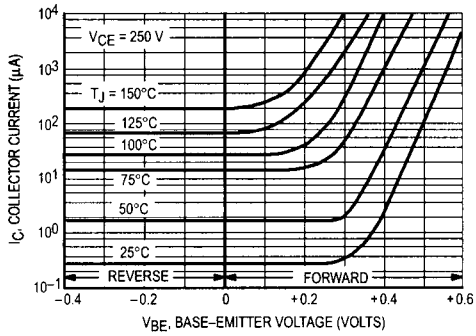


Figure 5. Collector Cutoff Region

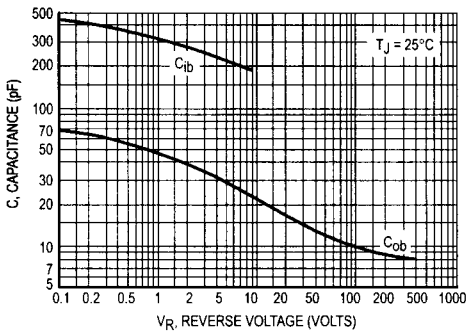


Figure 6. Capacitance