



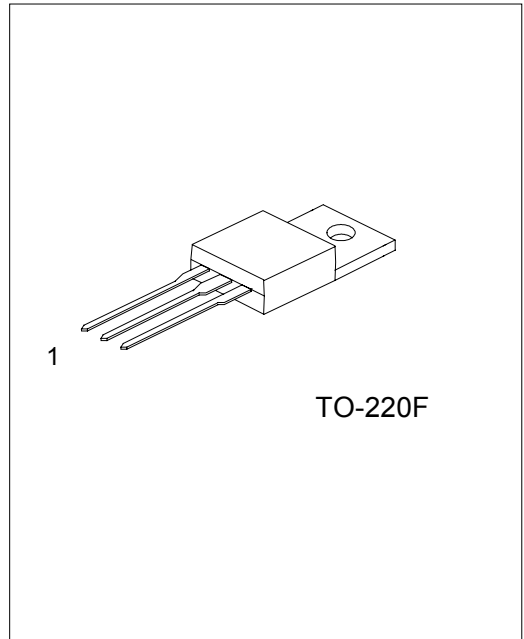
MJE13011

NPN EPITAXIAL SILICON TRANSISTOR

HIGH VOLTAGE HIGH SPEED SWITCHING

■ FEATURES

- * High voltage, high speed switching
- * High reliability



*Pb-free plating product number: MJE13011L

■ PIN CONFIGURATION

PIN NO.	PIN NAME
1	BASE
2	COLLECTOR
3	EMITTER

■ ORDERING INFORMATION

Order Number		Package	Packing
Normal	Lead Free Plating		
MJE13011-TF3-T	MJE13011L-TF3-T	TO-220F	Tube

■ ABSOLUTE MAXIMUM RATINGS (T_C = 25)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector Base Voltage	V _{CB0}	450	V
Collector Emitter Voltage	V _{CEO}	400	V
	V _{CEO(SUS)}	400	V
Emitter Base Voltage	V _{EBO}	7	V
Collector Current	I _C	10	A
Base Current	I _B	3	A
Power Dissipation	P _D	80	W
Junction Temperature	T _J	+150	
Storage Temperature	T _{STG}	-40 ~ +150	

■ ELECTRICAL SPECIFICATIONS (T_C=25 , Unless Otherwise Specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Base Voltage	V _{CB0}	I _{CB0} =1mA	450			V
Collector Emitter Voltage	V _{CEO}	I _{CEO} =10mA	400			V
	V _{CEO(SUS)}	I _C =1A	400			V
Emitter Base Voltage	V _{EBO}	I _{EBO} =0.1mA	7			V
Collector-Emitter Saturation Voltage	V _{CE(SAT)}	I _C =4A, I _B =0.8A			1.2	V
Base Emitter Saturation Voltage	V _{BE(SAT)}				1.5	V
Collector Cut-off Current	I _{CB0}	V _{CB0} =450V			1.0	mA
Emitter Cut-off Current	I _{EBO}	V _{EBO} =7V			0.1	mA
DC Current Gain	h _{FE}	I _C =4A, V _{CE} =5V	10			
Switching Time	t _{ON}	I _C =7.5A, I _{B1} =-I _{B2} =1.5A R _L =20Ω, P _w =20μs, Duty ≤ 2%			1.0	μs
	t _{STG}				2.0	μs
	t _F				1.0	μs

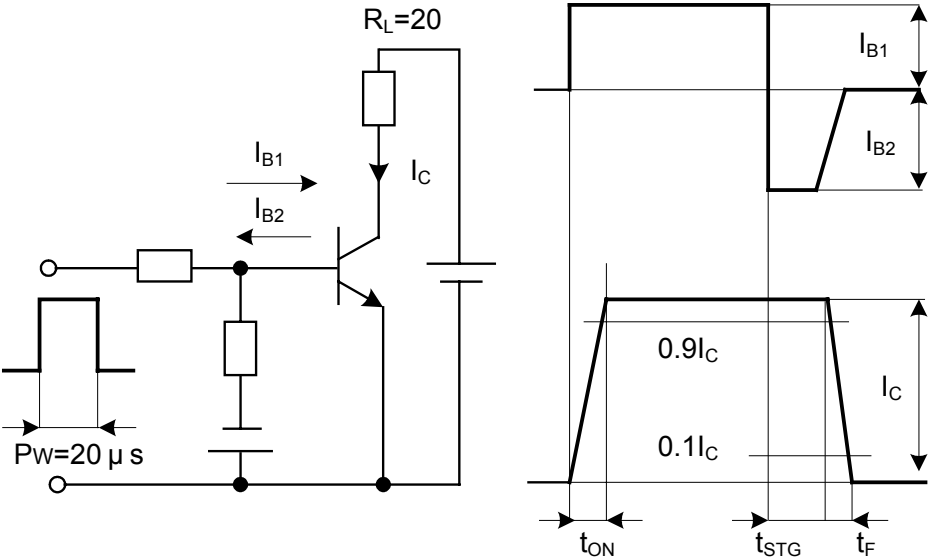
■ CLASSIFICATION of h_{FE}

RANK	A	B	C	D	E	F
RANGE	10 ~ 16	15 ~ 21	20 ~ 26	25 ~ 31	30 ~ 36	35 ~ 40

■ THERMAL DATA

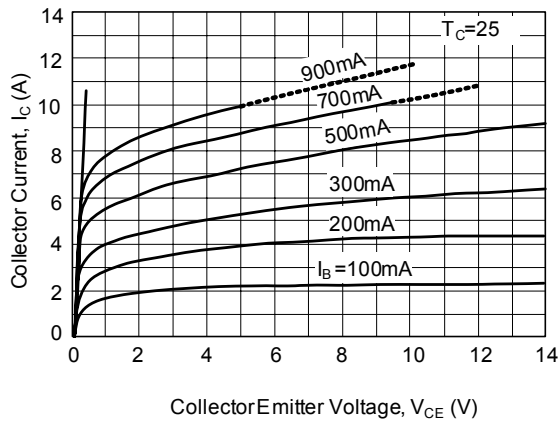
PARAMETER	SYMBOL	RATINGS	UNIT
Thermal Resistance Junction to Case	θ _{JC}	4	/W

■ SWITCHING TIME TEST CIRCUIT

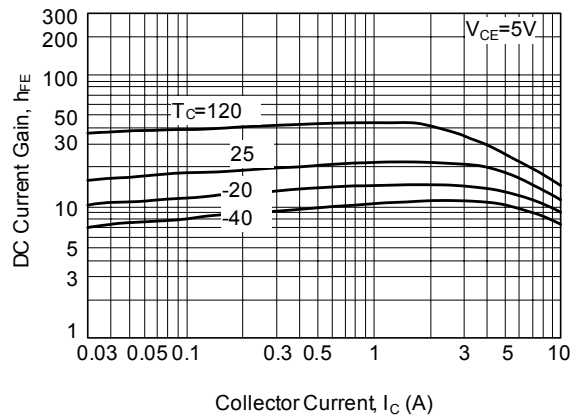


TYPICAL CHARACTERISTICS

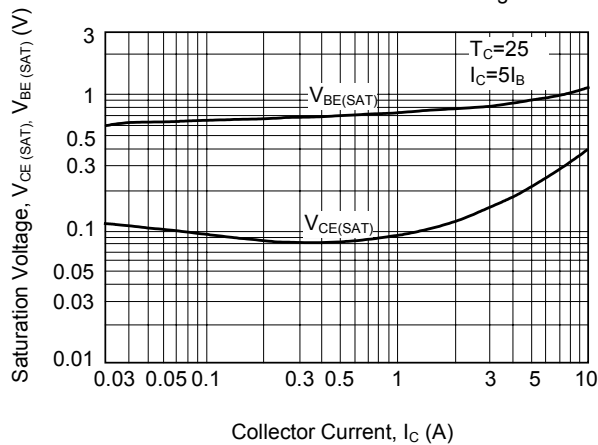
Collector Output Characteristics



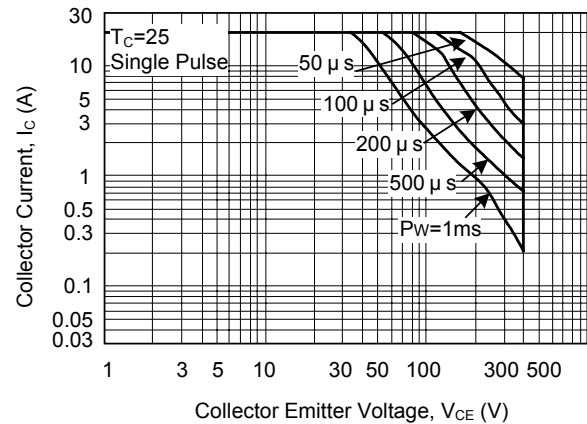
DC Current Gain



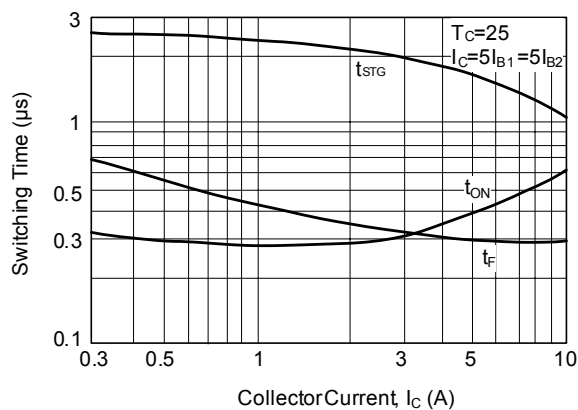
Base and Collector Saturation Voltage



Safe Operating Area



Switching Time



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