

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

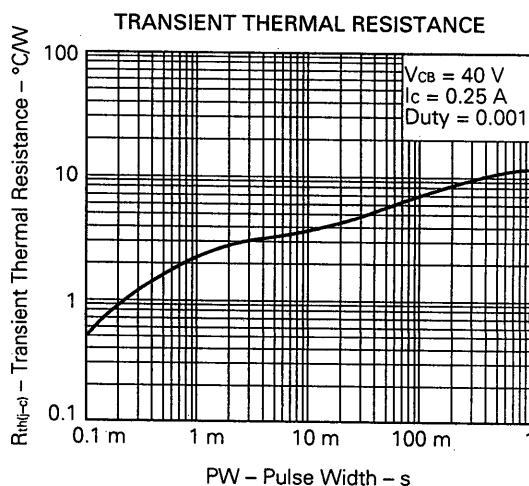
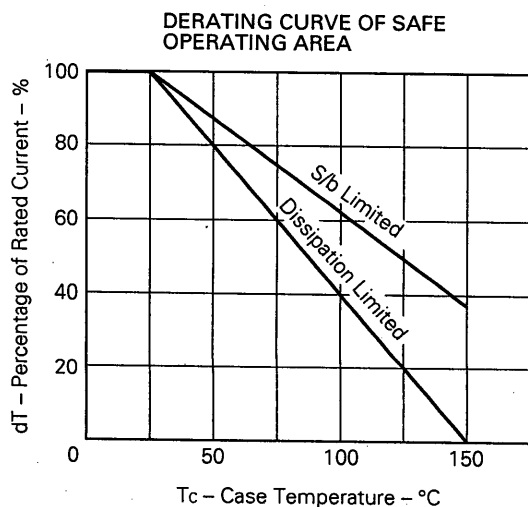
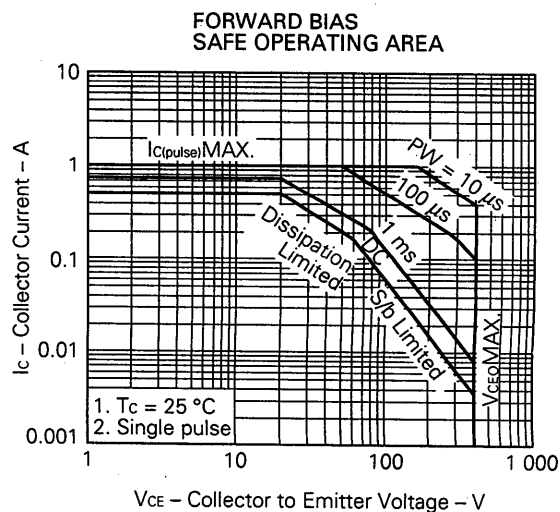
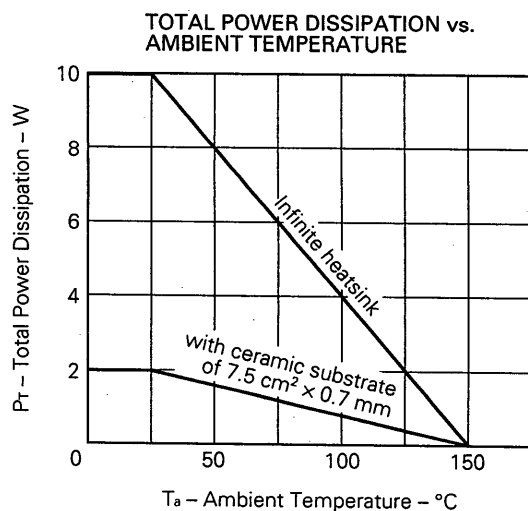
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			10	μA	$V_{CB} = 400\text{ V}$, $I_E = 0$
Emitter Cutoff Current	I_{EBO}			10	μA	$V_{EB} = 5.0\text{ V}$, $I_C = 0$
DC Current Gain	h_{FE1}^*	20	42	80		$V_{CE} = 5.0\text{ V}$, $I_C = 50\text{ mA}$
DC Current Gain	h_{FE2}^*	10	20			$V_{CE} = 5.0\text{ V}$, $I_C = 300\text{ mA}$
Collector Saturation Voltage	$V_{CE(sat)}^*$		0.2	0.5	V	$I_C = 300\text{ mA}$, $I_B = 60\text{ mA}$
Base Saturation Voltage	$V_{BE(sat)}^*$		0.85	1.0	V	$I_C = 300\text{ mA}$, $I_B = 60\text{ mA}$
Turn-on Time	t_{on}		0.12	1.0	μs	$I_C = 0.3\text{ A}$, $R_L = 500\ \Omega$ $V_{CC} = 150\text{ V}$, $PW = 50\ \mu\text{s}$ $I_{B1} = -I_{B2} = 0.06\text{ A}$ Duty Cycle $\leq 2\%$
Storage Time	t_{stg}		2.0	2.5	μs	
Fall Time	t_f		0.35	1.0	μs	

* Pulsed: $PW \leq 350\ \mu\text{s}$, Duty Cycle $\leq 2\%$

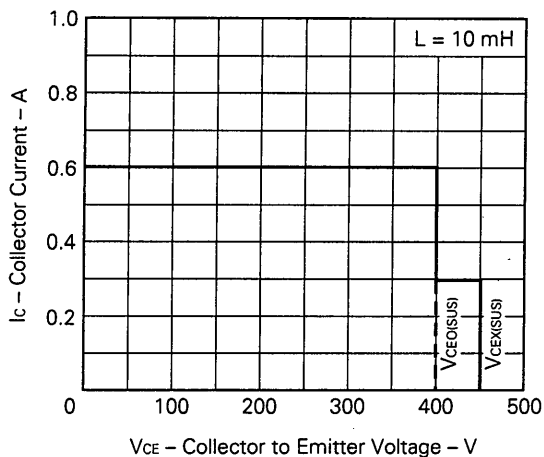
hFE Classification

MARKING	M	L	K
h_{FE1}	20 to 40	30 to 60	40 to 80

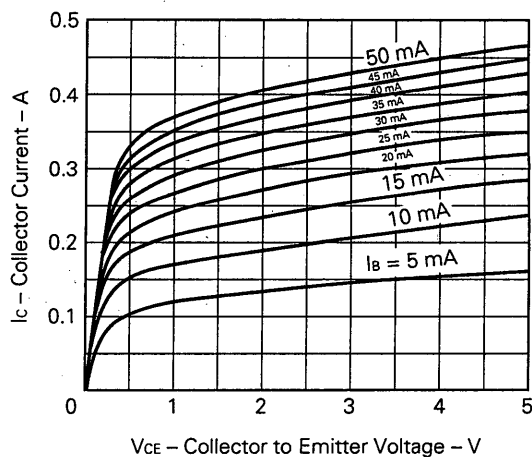
TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)



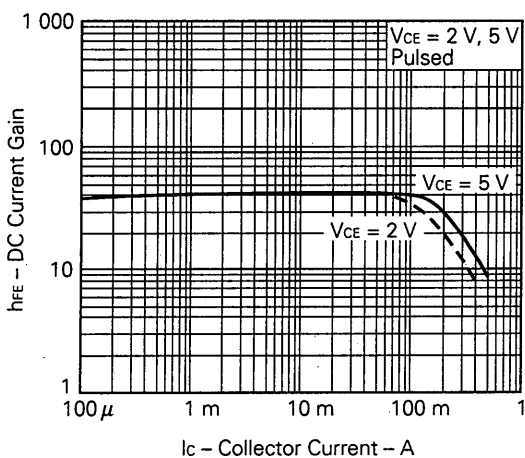
REVERSE BIAS
SAFE OPERATING AREA



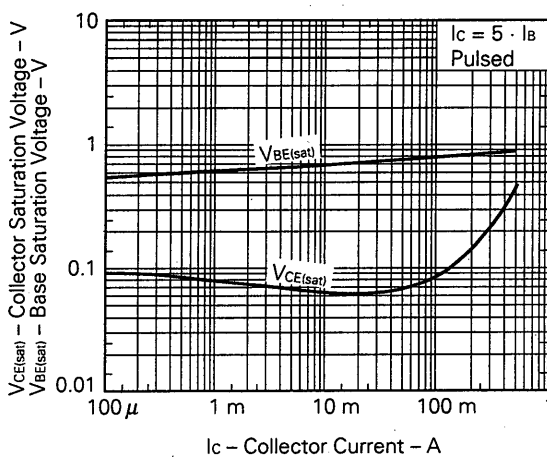
COLLECTOR CURRENT vs. COLLECTOR
TO EMITTER VOLTAGE



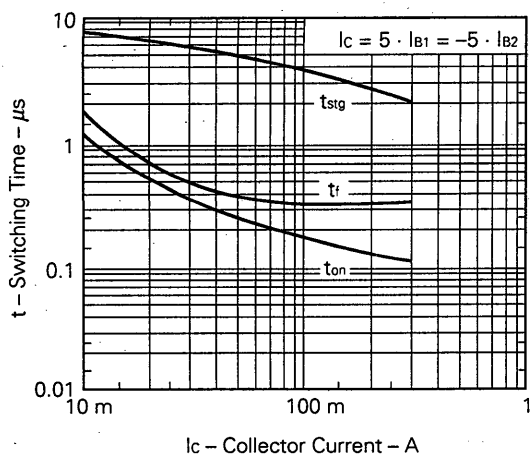
DC CURRENT GAIN vs.
COLLECTOR CURRENT



BASE AND COLLECTOR SATURATION
VOLTAGE vs. COLLECTOR CURRENT



TURN ON TIME, STORAGE TIME AND
FALL TIME vs. COLLECTOR CURRENT



Reference

Application note name	No.
Quality control of NEC semiconductors devices.	TEI-1202
Quality control guide of semiconductors devices.	MEI-1202
Assembly manual of semiconductors devices.	IEI-1207
Design of Push-Pull Type Switching Regulators (Basic)	TEB-1002
Design of Push-Pull Type Switching Regulators (Applications)	TEB-1003
Optimum Base Drive Conditions of Switching Power Transistors	TEB-1014

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