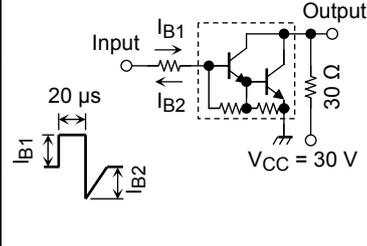




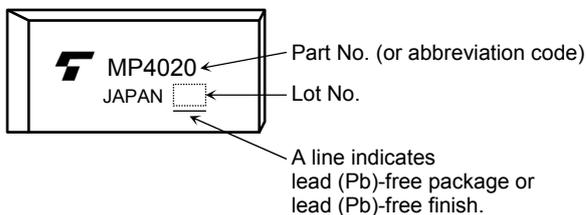
## Thermal Characteristics

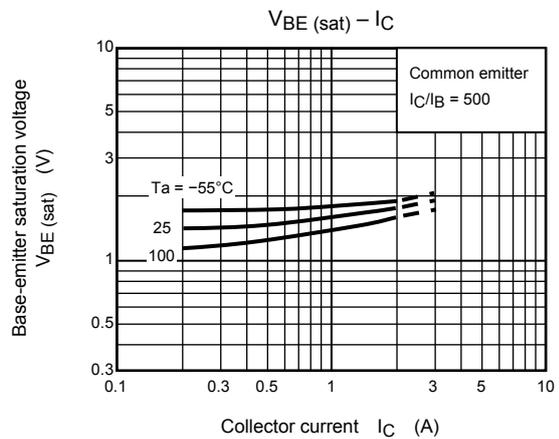
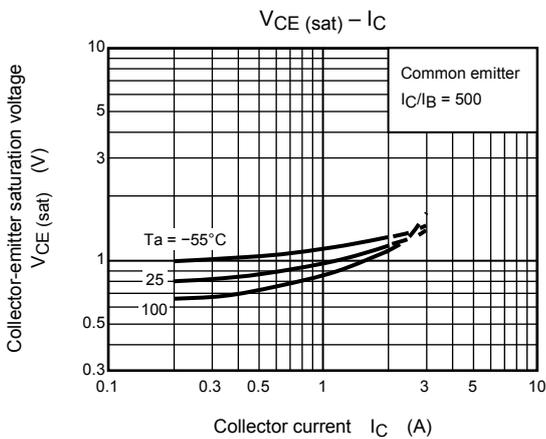
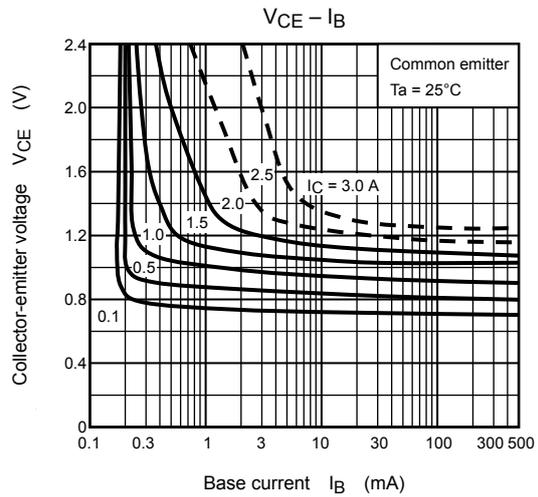
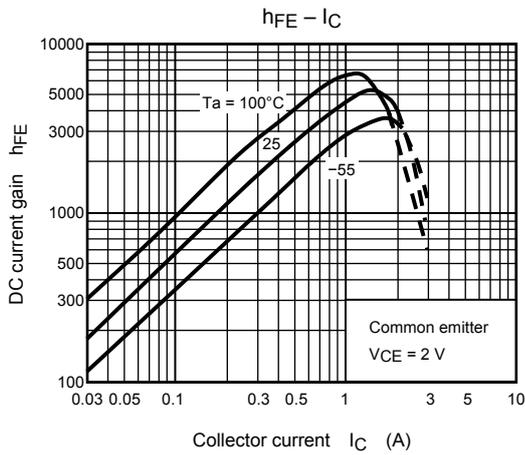
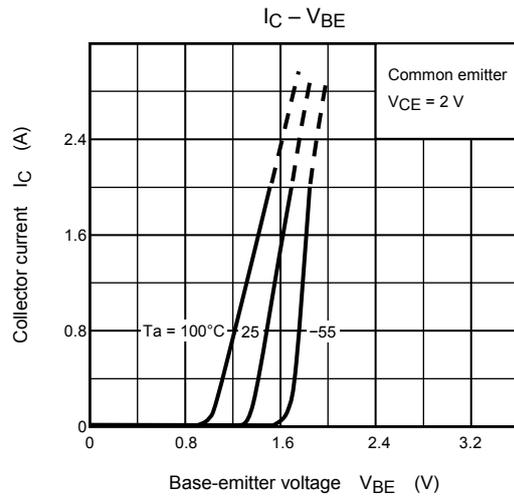
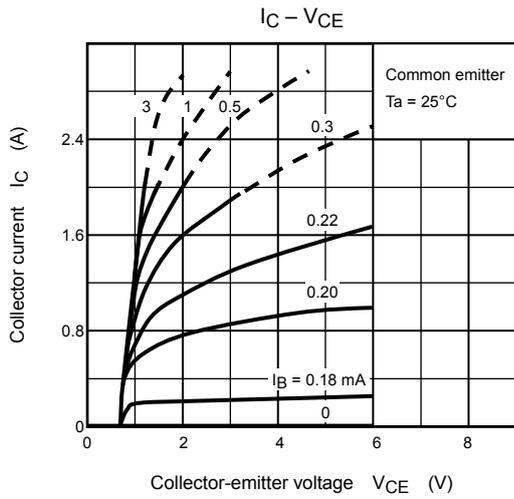
Characteristics	Symbol	Max	Unit
Thermal resistance from junction to ambient (4-devices operation, $T_a = 25^\circ\text{C}$ )	$\Sigma R_{th(j-a)}$	31.3	$^\circ\text{C/W}$
Maximum lead temperature for soldering purposes (3.2 mm from case for 10 s)	$T_L$	260	$^\circ\text{C}$

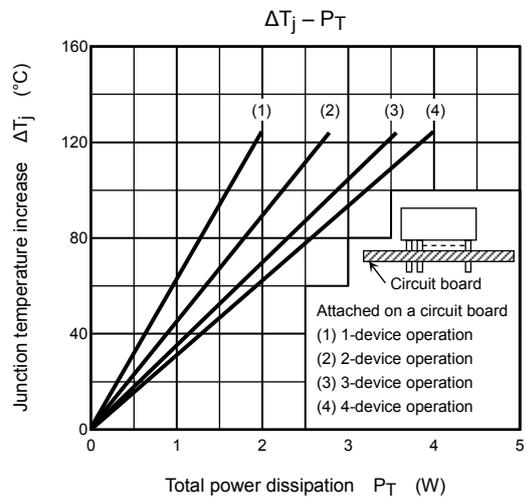
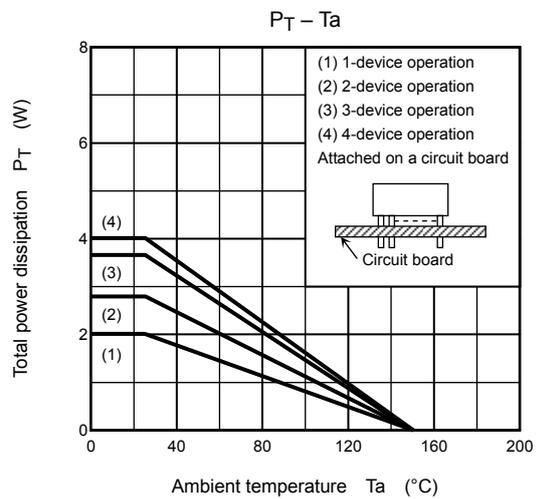
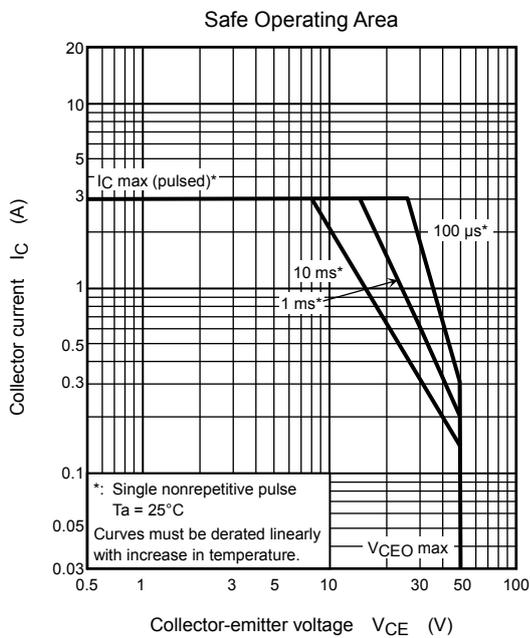
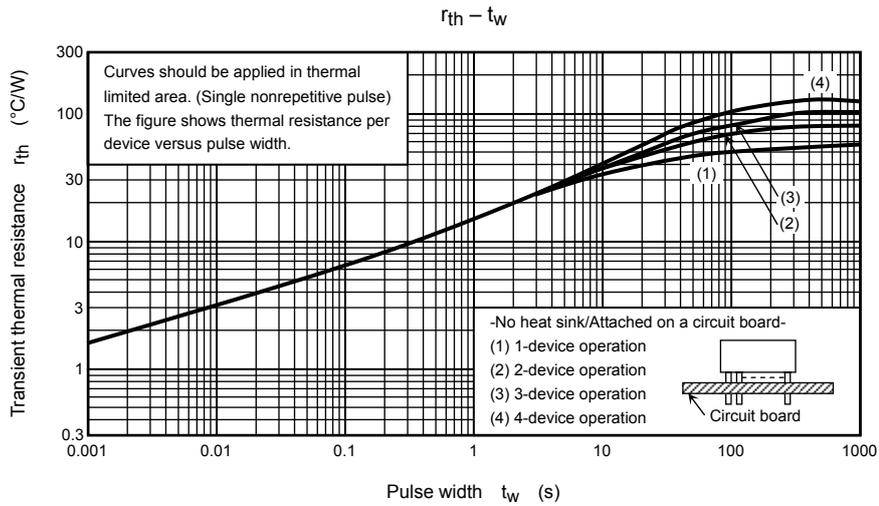
## Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		$I_{CBO}$	$V_{CB} = 45\text{ V}, I_E = 0\text{ A}$	—	—	10	$\mu\text{A}$
Collector cut-off current		$I_{CEO}$	$V_{CE} = 45\text{ V}, I_B = 0\text{ A}$	—	—	10	$\mu\text{A}$
Emitter cut-off current		$I_{EBO}$	$V_{EB} = 8\text{ V}, I_C = 0\text{ A}$	0.8	—	4.0	mA
Collector-emitter breakdown voltage		$V_{(BR)CEO}$	$I_C = 10\text{ mA}, I_B = 0\text{ A}$	50	60	70	V
DC current gain		$h_{FE}$	$V_{CE} = 2\text{ V}, I_C = 1\text{ A}$	2000	—	—	—
Saturation voltage	Collector-emitter	$V_{CE(sat)}$	$I_C = 1\text{ A}, I_B = 1\text{ mA}$	—	—	1.5	V
	Base-emitter	$V_{BE(sat)}$	$I_C = 1\text{ A}, I_B = 1\text{ mA}$	—	—	2.0	
Transition frequency		$f_T$	$V_{CE} = 2\text{ V}, I_C = 0.5\text{ A}$	—	100	—	MHz
Collector output capacitance		$C_{ob}$	$V_{CB} = 10\text{ V}, I_E = 0\text{ A}, f = 1\text{ MHz}$	—	20	—	pF
Switching time	Turn-on time	$t_{on}$		—	0.4	—	$\mu\text{s}$
	Storage time	$t_{stg}$		—	4.0	—	
	Fall time	$t_f$		—	0.6	—	

## Marking







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20070701-EN

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