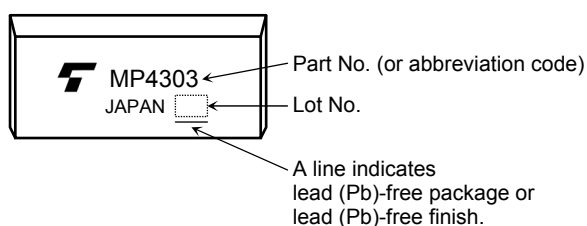


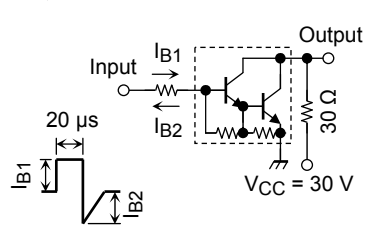
Marking



Thermal Characteristics

Characteristics	Symbol	Max	Unit
Thermal resistance from junction to ambient (4-device operation, $T_a = 25^\circ\text{C}$)	$\Sigma R_{th(j-a)}$	28.4	$^\circ\text{C/W}$
Maximum lead temperature for soldering purposes (3.2 mm from case for 10 s)	T_L	260	$^\circ\text{C}$

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

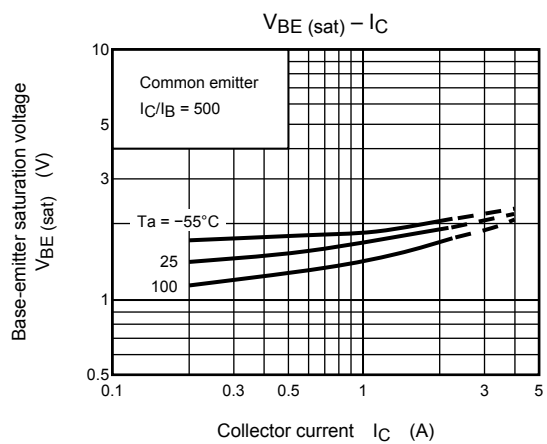
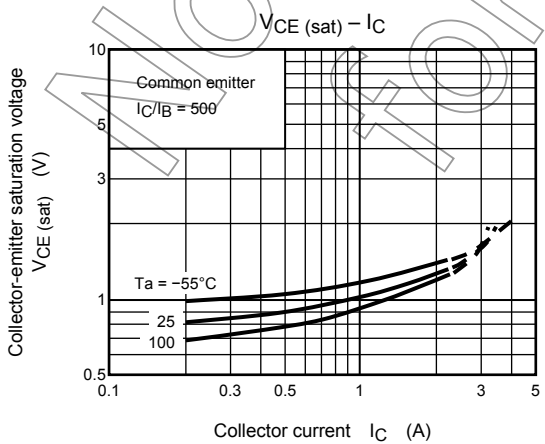
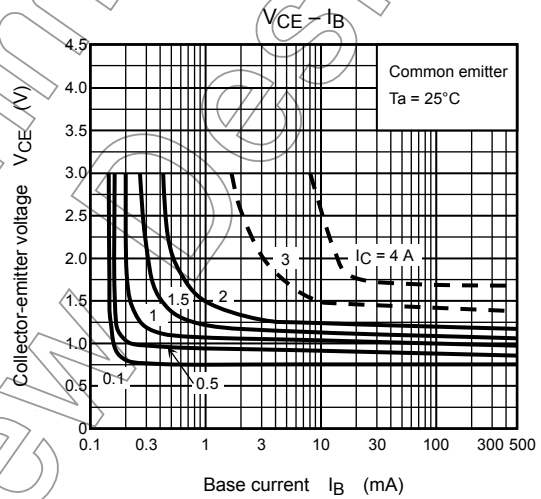
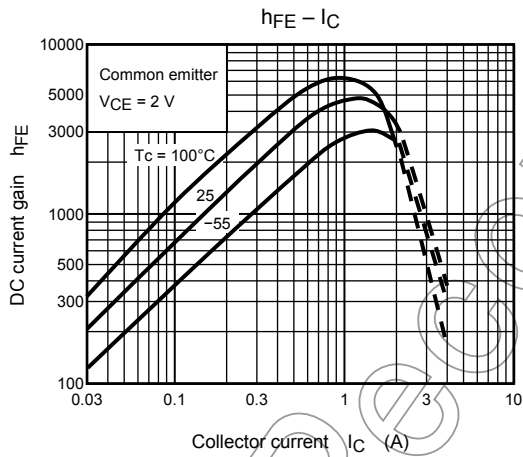
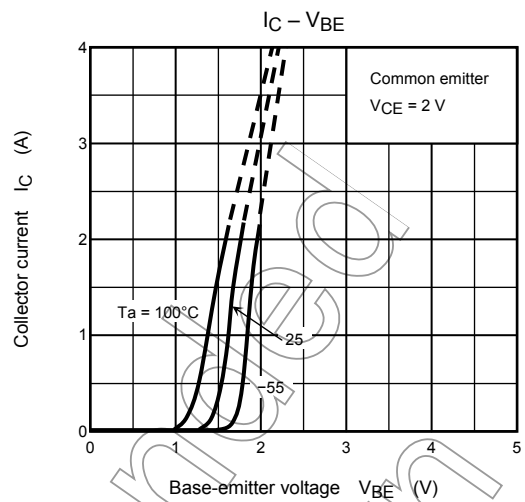
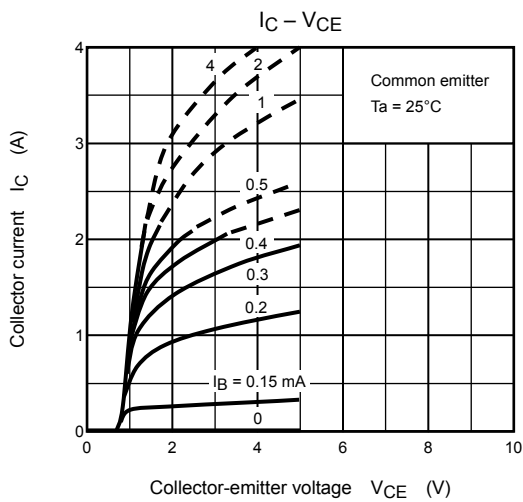
Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current		I_{CBO}	$V_{CB} = 120\text{ V}, I_E = 0\text{ A}$	—	—	10	μA
Collector cut-off current		I_{CEO}	$V_{CE} = 100\text{ V}, I_B = 0\text{ A}$	—	—	10	μA
Emitter cut-off current		I_{EBO}	$V_{EB} = 6\text{ V}, I_C = 0\text{ A}$	0.5	—	2.5	mA
Collector-base breakdown voltage		$V_{(BR)CBO}$	$I_C = 1\text{ mA}, I_E = 0\text{ A}$	120	—	—	V
Collector-emitter breakdown voltage		$V_{(BR)CEO}$	$I_C = 10\text{ mA}, I_B = 0\text{ A}$	100	—	—	V
DC current gain		$h_{FE(1)}$	$V_{CE} = 2\text{ V}, I_C = 1\text{ A}$	2000	—	15000	—
		$h_{FE(2)}$	$V_{CE} = 2\text{ V}, I_C = 2\text{ A}$	1000	—	—	
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}	 <p>$I_{B1} = -I_{B2} = 1\text{ mA}$, duty cycle $\leq 1\%$</p>	—	0.4	—	μs
	Storage time	t_{stg}		—	4.0	—	
	Fall time	t_f		—	0.6	—	

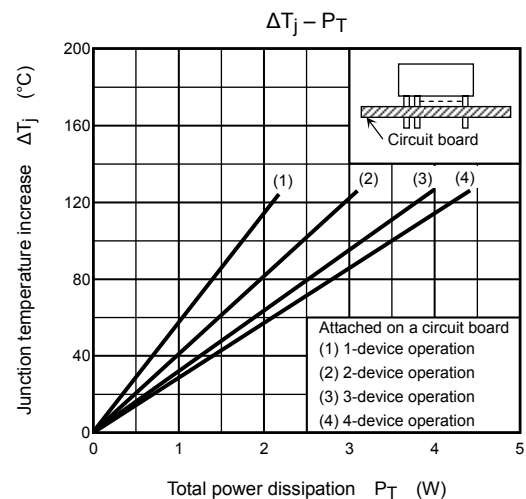
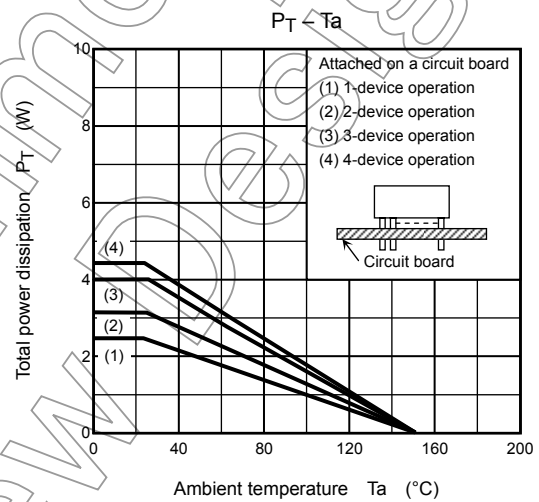
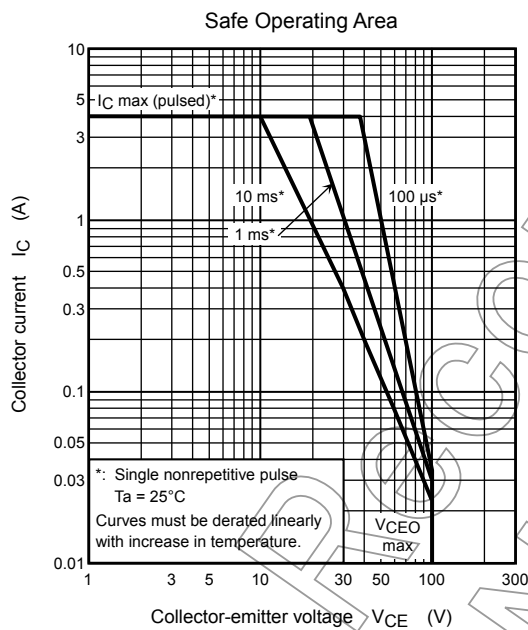
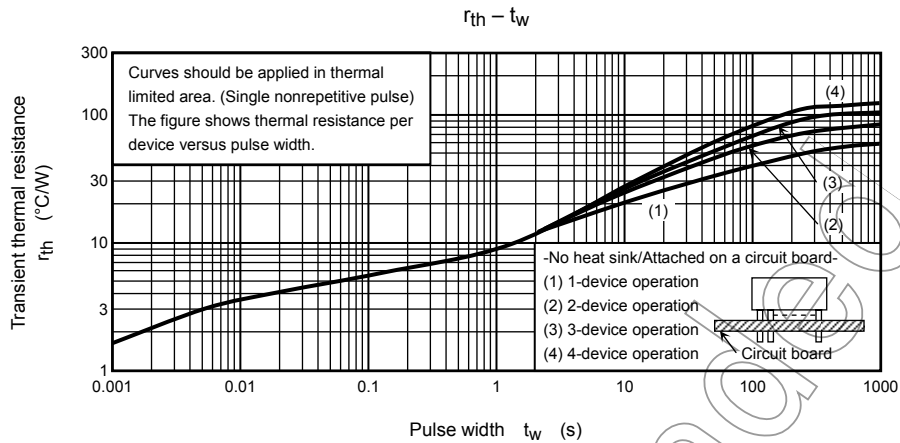
Emitter-Collector Diode Ratings and Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Maximum forward current	I_{FM}	—	—	—	2	A
Surge current	I_{FSM}	$t = 1 \text{ s, 1 shot}$	—	—	4	A
Forward voltage	V_F	$I_F = 0.5 \text{ A, } I_B = 0 \text{ A}$	—	—	2.0	V
Reverse recovery time	t_{rr}	$I_F = 2 \text{ A, } V_{BE} = -3 \text{ V, } dI_F/dt = -50 \text{ A}/\mu\text{s}$	—	1.0	—	μs
Reverse recovery charge	Q_{rr}		—	5	—	μC

Flyback-Diode Rating and Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Maximum forward current	I_{FM}	—	—	—	2	A
Reverse current	I_R	$V_R = 120 \text{ V}$	—	—	0.4	μA
Reverse voltage	V_R	$I_R = 100 \mu\text{A}$	120	—	—	V
Forward voltage	V_F	$I_F = 0.5 \text{ A}$	—	—	1.8	V





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20070701-EN

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