

2SA1807F5

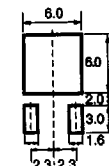
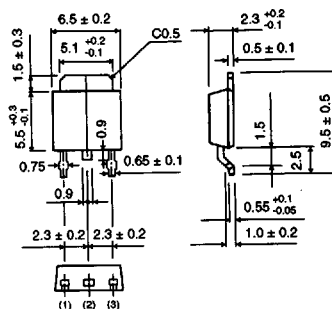
Transistor, PNP

Features

- available in CPT F5 (SC-63) package
- package marking: A1807★□, where ★ is h_{FE} code and □ is lot number
- high breakdown voltage, $BV_{CEO} = -600$ V
- low collector saturation voltage, typically $V_{CE(sat)} = -0.25$ V for $I_C/I_B = -300$ mA/-60 mA
- high switching speed, typically $t_f \approx 1.0$ μ s for $I_C = -500$ mA
- wide safe operating area (SOA)

Dimensions (Units : mm)

2SA1807F5 (CPT F5)



- (1) Base
- (2) Collector
- (3) Emitter

Applications

- high voltage switching
- power supply switching for telephones

Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

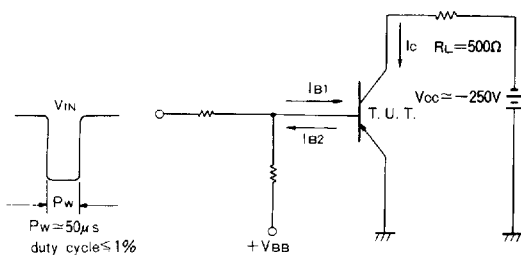
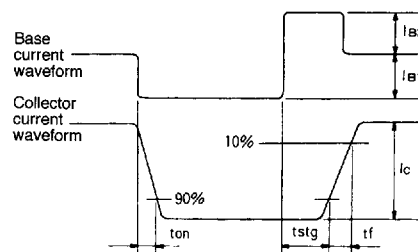
Parameter	Symbol	Limits	Unit	Conditions
Collector-to-base voltage	V_{CBO}	-600	V	
Collector-to-emitter voltage	V_{CEO}	-600	V	
Emitter-to-base voltage	V_{EBO}	-7	V	
Collector current	I_C	-1.0	A	DC
		-2.0		$P_W \leq 300$ μ s, duty cycle $\leq 10\%$
Collector dissipation	P_C	1.0	W	$T_C = 25^\circ\text{C}$
		10		
Junction temperature	T_j	150	$^\circ\text{C}$	
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$	

Electrical characteristics (unless otherwise noted, $T_a = 25^\circ\text{C}$)

Parameter	Symbol	Min	Typical	Max	Unit	Conditions
Collector-to-base breakdown voltage	BV_{CBO}	-600			V	$I_C = -50\ \mu\text{A}$
Collector-to-emitter breakdown voltage	BV_{CEO}	-600			V	$I_C = -1\ \text{mA}$
Emitter-to-base breakdown voltage	BV_{EBO}	-7			V	$I_E = -50\ \mu\text{A}$
Collector cutoff current	I_{CBO}			-10	μA	$V_{CB} = -600\ \text{V}$
Emitter cutoff current	I_{EBO}			-10	μA	$V_{EB} = -7\ \text{V}$
DC current gain	h_{FE1}	56	100	180		$V_{CE} = -5\ \text{V}$, $I_C = -100\ \text{mA}$
	h_{FE2}	5				$V_{CE} = -5\ \text{V}$, $I_C = -0.5\ \text{mA}$
Collector-to-emitter saturation voltage	$V_{CE(sat)}$		-0.25	-1.0	V	$I_C/I_B = -300\ \text{mA/-60 mA}$
Base-to-emitter saturation voltage	$V_{BE(sat)}$			-1.2	V	$I_C/I_B = -300\ \text{mA/-60 mA}$
Transition frequency	f_T		15		MHz	$V_{CE} = -10\ \text{V}$, $I_E = 50\ \text{mA}$, $f = 5\ \text{MHz}$
Output capacitance	C_{ob}		40		pF	$V_{CB} = -10\ \text{V}$, $I_E = 0\ \text{mA}$, $f = 1\ \text{MHz}$
Turn on time	t_{on}		0.2		μs	$I_C = -500\ \text{mA}$, $R_L = 500\ \Omega$, $I_{B1} = -I_{B2} = -100\ \text{mA}$, $V_{CC} \approx 250\ \text{V}$
Storage time	T_{stg}		1.8		μs	
Fall time	t_f		0.4		μs	

 h_{FE} rankings

Item	N	P
h_{FE}	56 ~ 120	82 ~ 180

Test circuits**Figure 1 Switching time test circuit****Figure 2 Switching time waveforms**

Electrical characteristic curves

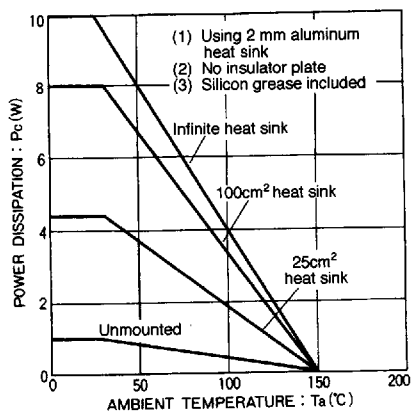


Figure 3

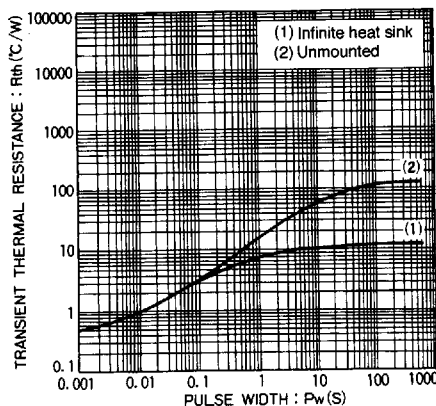


Figure 5

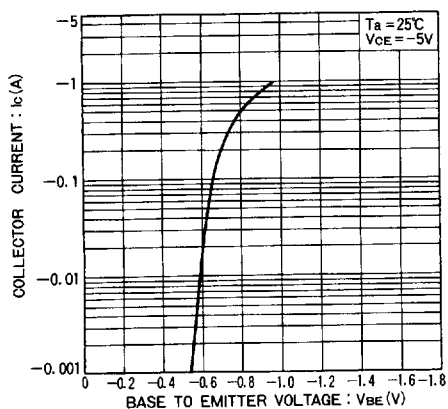


Figure 7

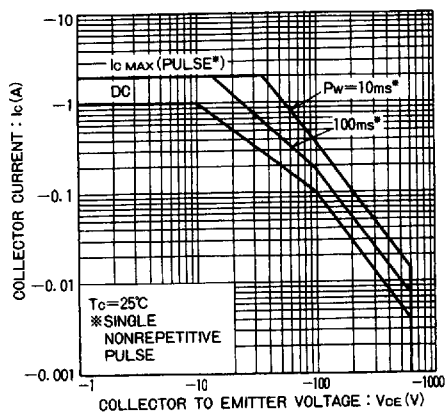


Figure 4

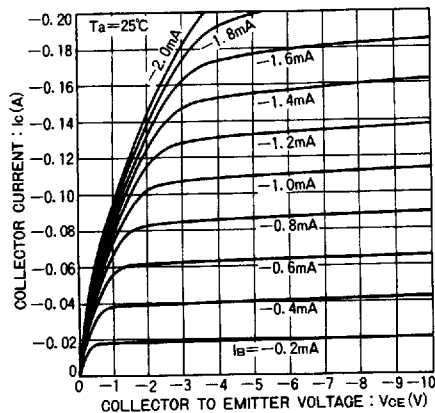


Figure 6

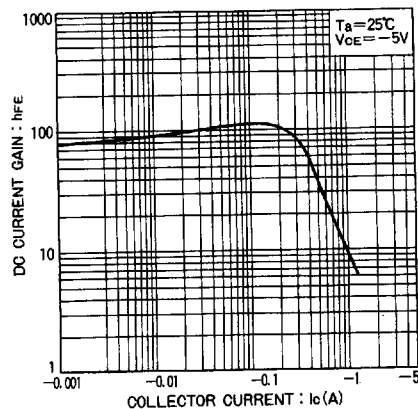


Figure 8

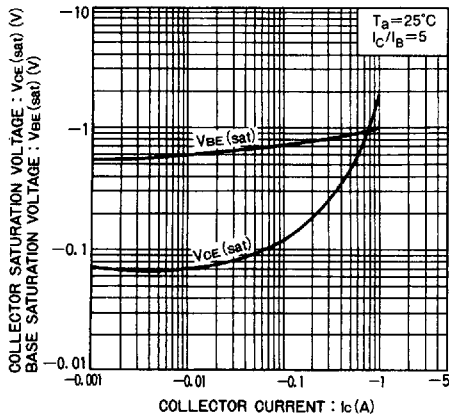


Figure 9

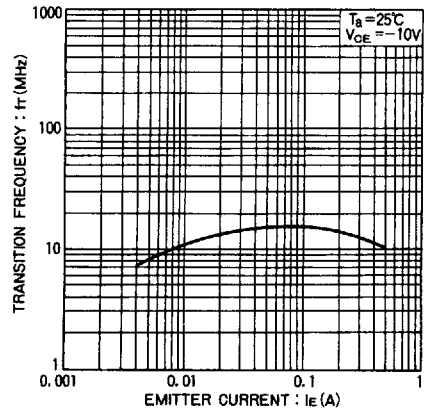


Figure 10

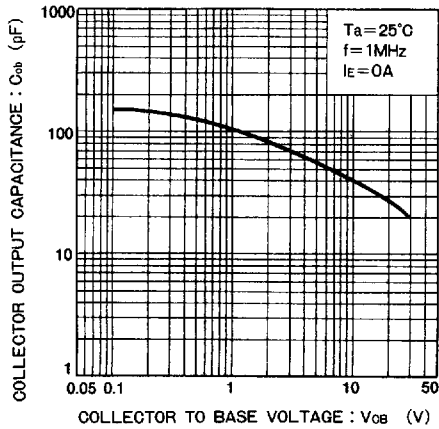


Figure 11

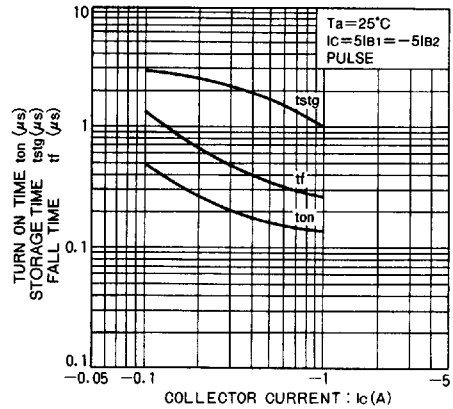


Figure 12

Ordering information

Package	Tape
Code	TL
Basic order quantity	2500
2SA1807F5	★
★ = Standard, ☆ = Semi-standard, * = Special order	