

SILICON POWER TRANSISTOR 2SC2517

NPN SILICON EPITAXIAL TRANSISTOR FOR HIGH-SPEED SWITCHING

The 2SC2517 is a mold power transistor developed for high-speed switching. This transistor is ideal for use in drivers such as switching regulators, DC/DC converters, high-frequency power amplifiers.

FEATURES

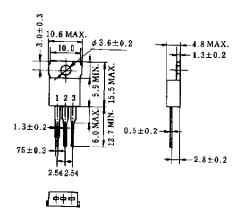
- Low collector saturation voltage:
 V_{CE(sat)} ≤ 0.6 V (at I_C = 3.0 A)
- Fast switching speed: $t_f \le 0.5 \ \mu s$ (at $l_C = 3.0 \ A$)
- Wide base reverse-bias SOA:
 Vcex(sus) ≤ 150 V (at Ic = 3.0 A)

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Parameter	Symbol	Ratings	Unit	
Collector to base voltage	Vсво	150	V	
Collector to emitter voltage	VCEO	100	V	
Emitter to base voltage	V _{EBO}	12	V	
Collector current (DC)	Ic(DC)	5.0	Α	
Collector current (pulse)	Ic(pulse)*	10	Α	
Base current (DC)	I _{B(DC)}	2.5	Α	
Total power dissipation	P _T (Tc = 25°C)	30	W	
Total power dissipation	P⊤ (Ta = 25°C)	1.5	W	
Junction temperature	Tj	150	°C	
Storage temperature	Tstg	-55 to +150	°C	

^{*} PW \leq 300 μ s, duty cycle \leq 10%

PACKAGE DRAWING (UNIT: mm)



Electrode Connection

- 1. Base (B)
- 2. Collector (C)
- 3. Emitter (E)
- 4. Fin (collector)

EIAJ: SC-46 JEDEC: TO-220AB IEC: —

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

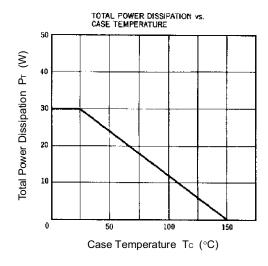
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector to emitter voltage	VCEO(SUS)	Ic = 3.0 A, I _{B1} = 0.3 A, L = 1 mH	100			V
Collector to emitter voltage	VCEX(SUS)1	$I_C = 3.0 \text{ A}, I_{B1} = -I_{B2} = 0.3 \text{ A},$ $V_{BE(OFF)} = -5.0 \text{ V}, L = 180 \ \mu\text{H}, clamped}$ 150				V
Collector to emitter voltage	VCEX(SUS)2	Ic = 6.0 A, I _{B1} = 1.2 A, I _{B2} = -0.3 A, V _{BE(OFF)} = -5.0 V, L = 180 μ H, clamped	100			V
Collector cutoff current	Ісво	V _{CB} = 100 V, I _E = 0			10	μΑ
Collector cutoff current	Icer	VcE = 100 V, R _{BE} = 51 Ω, Ta = 125°C			1.0	mA
Collector cutoff current	ICEX1	VcE = 100 V, VBE(OFF) = -1.5 V			10	μΑ
Collector cutoff current	ICEX2	$V_{CE} = 100 \text{ V}, V_{BE(OFF)} = -1.5 \text{ V},$ $Ta = 125^{\circ}\text{C}$			1.0	mA
Emitter cutoff current	ІЕВО	V _{EB} = 10 V, I _C = 0			10	μΑ
DC current gain	h _{FE1}	V _{CE} = 5.0 V, I _C = 0.2 A*	40			
DC current gain	h _{FE2}	VcE = 5.0 V, Ic = 2.0 A*	40		200	
Collector saturation voltage	V _{CE(sat)}	Ic = 3.0 A, I _B = 0.3 A*			0.6	V
Base saturation voltage	V _{BE(sat)}	Ic = 3.0 A, I _B = 0.3 A*			1.5	V
Turn-on time	ton	Ic = 3.0 A, R _L = 17 Ω,			0.5	μs
Storage time	t stg	$I_{B1} = -I_{B2} = 0.3 \text{ A}, \text{ Vcc} \cong 50 \text{ V}$ Refer to the test circuit.			2.5	μs
Fall time	t _f	There to the test circuit.			0.5	μs

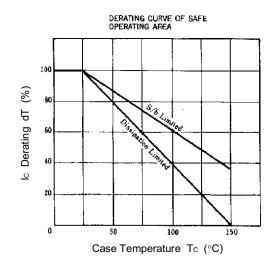
^{*} Pulse test PW \leq 350 μ s, duty cycle \leq 2%

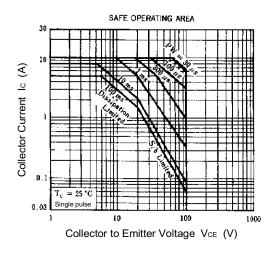
hfe2 CLASSIFICATION

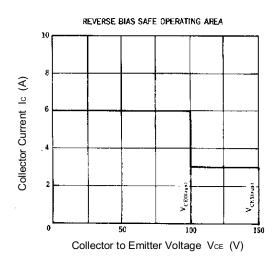
Marking	М	L	К
h _{FE2}	40 to 80	60 to 120	100 to 200

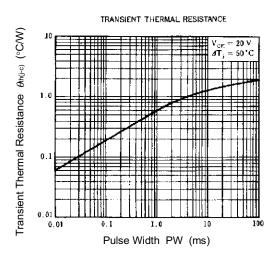
TYPICAL CHARACTERISTICS (Ta = 25°C)

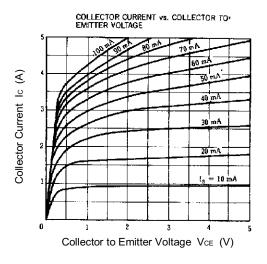


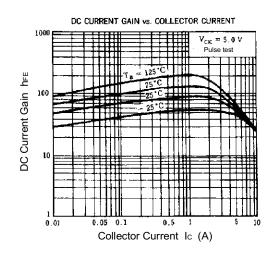


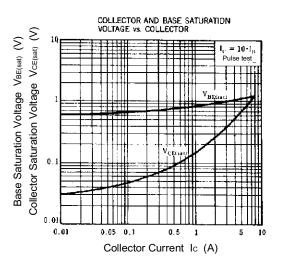




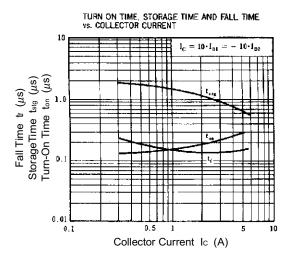




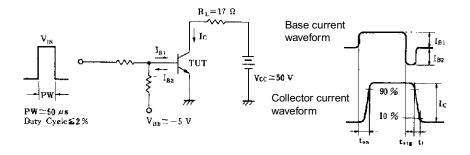




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SWITCHING TIME (ton, tstg, tf) TEST CIRCUIT





[MEMO]

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