

SILICON POWER TRANSISTOR 2SC4552

NPN SILICON EPITAXIAL TRANSISTOR FOR HIGH-SPEED SWITCHING

The 2SC4552 is a power transistor developed for high-speed switching and features low V_{CE(sat)} and high h_{FE}. This transistor is ideal for use in drivers such as DC/DC converters and actuators.

In addition, a small resin-molded insulation type package contributes to high-density mounting and reduction of mounting cost.

FEATURES

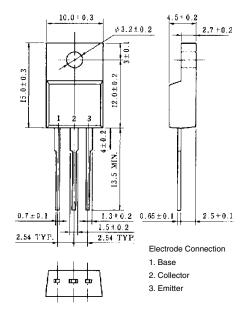
- High hre and low VcE(sat): $\text{hre} \geq 100 \text{ (VcE} = 2 \text{ V, Ic} = 3 \text{ A)}$ $\text{VcE(sat)} \leq 0.3 \text{ V (Ic} = 8 \text{ A, IB} = 0.4 \text{ A)}$
- Mold package that does not require an insulating board or insulation bushing

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	V _{СВО}	100	V
Collector to emitter voltage	VCEO	60	V
Emitter to base voltage	V _{EBO}	7.0	٧
Collector current (DC)	Ic(DC)	15	Α
Collector current (pulse)	Ic(pulse)*	30	Α
Base current (DC)	I _{B(DC)}	7.5	Α
Total power dissipation	P⊤ (Tc = 25°C)	30	W
Total power dissipation	P⊤ (Ta = 25°C)	2.0	W
Junction temperature	T _j	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

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

PACKAGE DRAWING (UNIT: mm)



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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

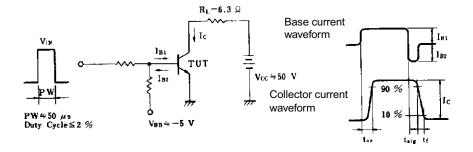
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector to emitter voltage	VCEO(SUS)	Ic = 8.0 A, I _B = 0.8 A, L = 1 mH	60			V
Collector to emitter voltage	VCEX(SUS)	$I_C = 8.0 \text{ A}, I_{B1} = -I_{B2} = 0.8 \text{ A},$ $V_{BE(OFF)} = -1.5 \text{ V}, L = 180 \ \mu\text{H}, clamped}$				V
Collector cutoff current	Ісво	Vcb = 60 V, IE = 0			10	μΑ
Collector cutoff current	ICER	Vce = 60 V, R _{BE} = 50 Ω, Ta = 125°C			1.0	mA
Collector cutoff current	ICEX1	Vce = 60 V, VBE(OFF) = -1.5 V			10	μΑ
Collector cutoff current	ICEX2	$V_{CE} = 60 \text{ V}, V_{BE(OFF)} = -1.5 \text{ V},$ $Ta = 125^{\circ}C$			1.0	mA
Emitter cutoff current	ІЕВО	V _{EB} = 5.0 V, I _C = 0			10	μΑ
DC current gain	h _{FE1} *	VcE = 2.0 V, Ic = 1.5 A	100			
DC current gain	h _{FE2} *	Vce = 2.0 V, Ic = 3.0 A	100		400	
DC current gain	h _{FE3} *	Vce = 2.0 V, Ic = 8.0 A	60			
Collector saturation voltage	V _{CE(sat)1} *	Ic = 8.0 A, I _B = 0.4 A			0.3	V
Collector saturation voltage	V _{CE(sat)2} *	Ic = 12 A, I _B = 0.6 A			0.5	V
Base saturation voltage	V _{BE(sat)1} *	Ic = 8.0 A, I _B = 0.4 A			1.2	V
Base saturation voltage	V _{BE(sat)2} *	Ic = 12 A, I _B = 0.6 A			1.5	V
Collector capacitance	Cob	VcB = 10 V, IE = 0, f = 1.0 MHz		180		pF
Gain bandwidth product	f⊤	VcE = 10 V, Ic = 1.5 A		120		MHz
Turn-on time	ton	Ic = 8.0 A, RL = 6.3 Ω ,			0.3	μs
Storage time	t stg	$I_{B1} = -I_{B2} = 0.4 \text{ A}, \text{ Vcc} \cong 50 \text{ V}$ Refer to the test circuit.			1.5	μs
Fall time	t _f	nerer to the test circuit.			0.3	μs

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

hfe CLASSIFICATION

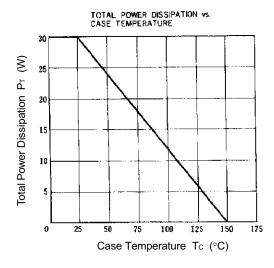
Marking	М	L	K
h _{FE2}	100 to 200	150 to 300	200 to 400

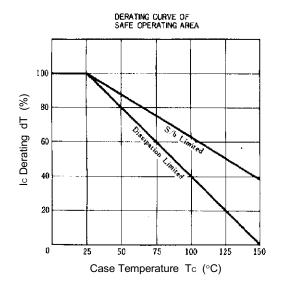
SWITCHING TIME (ton, tstg, tf) TEST CIRCUIT

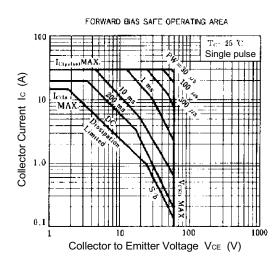


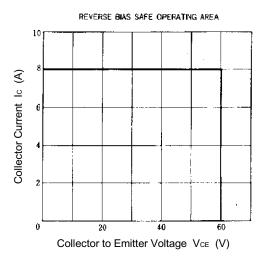


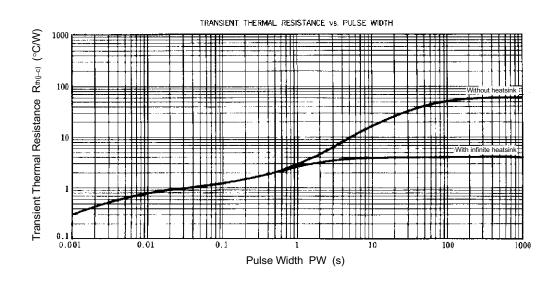
TYPICAL CHARACTERISTICS (Ta = 25°C)



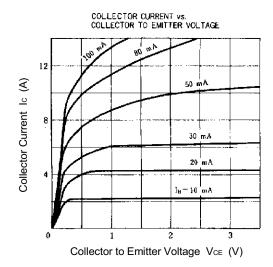


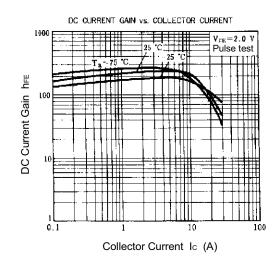


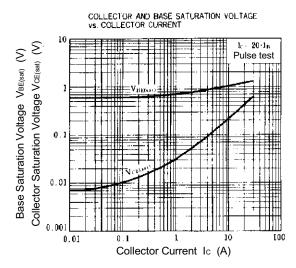


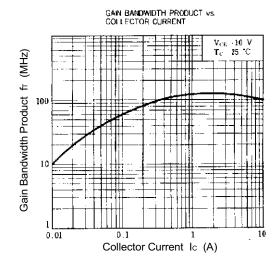


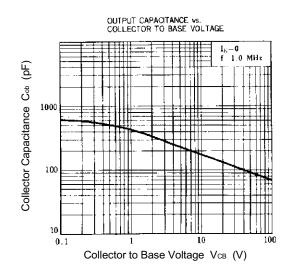
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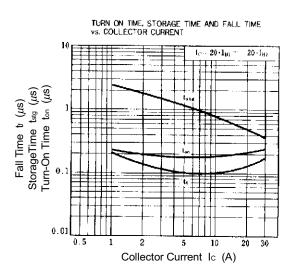














[MEMO]

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