

SILICON TRANSISTOR 2SA1714

PNP SILICON EPITAXIAL POWER TRANSISTOR (DARLINGTON CONNECTION) FOR HIGH-SPEED SWITCHING

The 2SA1714 is a high-speed darlington power transistor. This transistor is ideal for high-precision control such as PWM control for pulse mortors or blushless mortor of OA and FA equipment.

FEATURES

- · High DC current amplifiers due to darlington connection
- Large current capacitance and low VCE(sat)
- TO-126 power transistor with high power dissipation
- Complementary transistor with 2SC4342

QUALITY GRADES

Standard

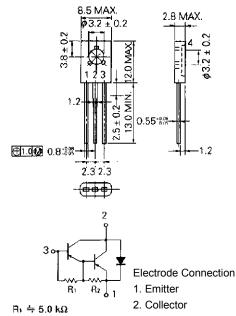
Please refer to "Quality Grades on NEC Semiconductor Devices" (Document No. C11531E) published by NEC Corporation to know the specification of quality grade on the devices and its recommended applications.

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	Vcво	-100	V
Collector to emitter voltage	VCEO	-100	V
Emitter to base voltage	VEBO	-8.0	V
Collector current (DC)	Ic(DC)	∓3.0	Α
Collector current (pulse)	Ic(pulse)*	∓6.0	Α
Base current (DC)	I _{B(DC)}	-0.3	Α
Total power dissipation	P⊤ (Ta = 25°C)	1.3	W
Total power dissipation	P _T (Tc = 25°C)	12	W
Junction temperature	Tj	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

^{*} PW \leq 10 ms, duty cycle \leq 50%

PACKAGE DRAWING (UNIT: mm)



 $R_2 = 0.7 \text{ k}\Omega$

3. Base

4. Fin (collector)

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Not all devices/types available in every country. Please check with local NEC representative for availability and additional information



ELECTRICAL CHARACTERISTICS (Ta = 25°C)

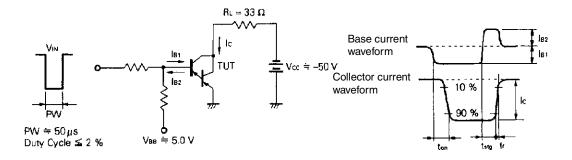
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector to emitter voltage	VCEO(SUS)	$I_{C} = -3.0 \text{ A}, I_{B} = -3.0 \text{ mA}, L = 1.0 \text{ mH}$	-100			V
Collector cutoff current	Ісво	V _{CB} = -100 V, I _E = 0			-10	μΑ
Collector cutoff current	Iceo	VcE = -100 V, RBE = ∞			-10	μΑ
DC current gain	h _{FE1} **	VcE = -2.0 V, Ic = -1.5 A	2,000		20,000	_
DC current gain	h _{FE2} **	Vce = -2.0 V, Ic = -3.0 A	1,000			_
Collector saturation voltage	V _{CE(sat)} **	$I_C = -1.5 \text{ A}, I_B = -1.5 \text{ mA}$		-0.9	-1.2	٧
Base saturation voltage	V _{BE(sat)} **	$I_C = -1.5 \text{ A}, I_B = -1.5 \text{ mA}$		-1.5	-2.0	V
Turn-on time	ton	$I_C = -1.5 \text{ A}, I_{B1} = -I_{B2} = -1.5 \text{ mA},$		0.15		μs
Storage time	t _{stg}	RL = 33 Ω , Vcc \cong -50 V Refer to the test circuit.		1.2		μs
Fall time	tf	nelei to the test circuit.		0.6		μs

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

hfe CLASSIFICATION

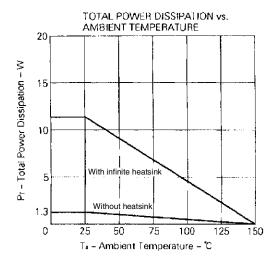
Marking	М	L	K
h _{FE1}	2,000 to 5,000	4,000 to 10,000	8,000 to 20,000

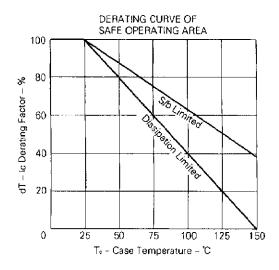
SWITCHING TIME (ton, tstg, tf) TEST CIRCUIT

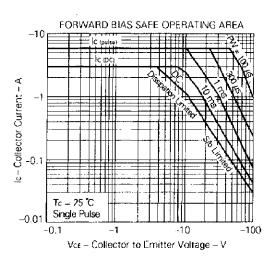


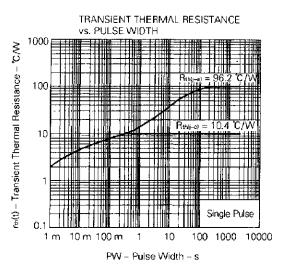


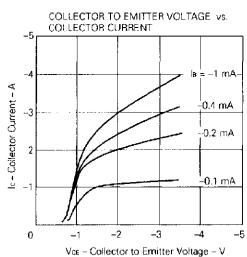
TYPICAL CHARACTERISTICS (Ta = 25°C)

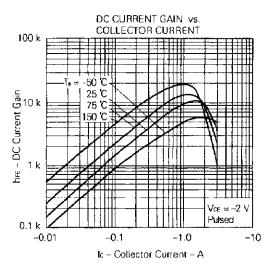




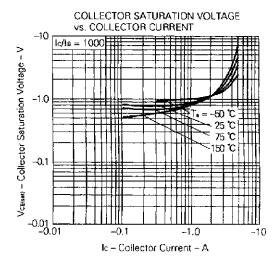


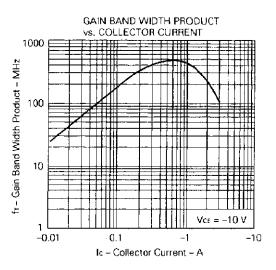


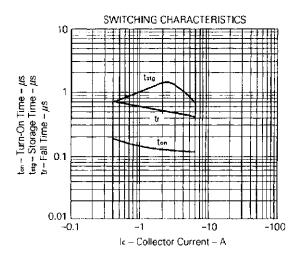


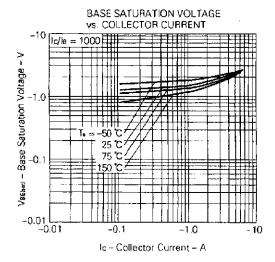


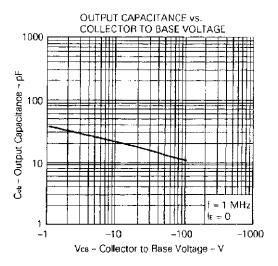
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[MEMO]

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