

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

The 2SC4342 is a high-speed Darlington power transistor.

This transistor is ideal for high-precision control such as PWM control for pulse motors or brushless motor of OA and FA equipment.

ORDERING INFORMATION

Part No.	Package
2SC4342	TO-126

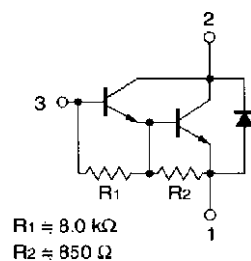
FEATURES

- On-chip C-to-E reverse diode
- Fast switching speed

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

Parameter	Symbol	Conditions	Ratings	Unit
Collector to base voltage	V _{CB0}		150	V
Collector to emitter voltage	V _{CE0}		100	V
Emitter to base voltage	V _{EB0}		8.0	V
Collector current (DC)	I _{C(DC)}		±3.0	A
Collector current (pulse)	I _{C(pulse)}	PW ≤ 10 ms, duty cycle ≤ 50%	±5.0	A
Base current (DC)	I _{B(DC)}		0.3	A
Total power dissipation	P _T	T _A = 25°C	1.3	W
		T _C = 25°C	12	W
Junction temperature	T _J		150	°C
Storage temperature	T _{stg}		-55 to +150	°C

INTERNAL EQUIVALENT CIRCUIT



1. Base
2. Collector
3. Emitter

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ELECTRICAL CHARACTERISTICS (T_A = 25°C)

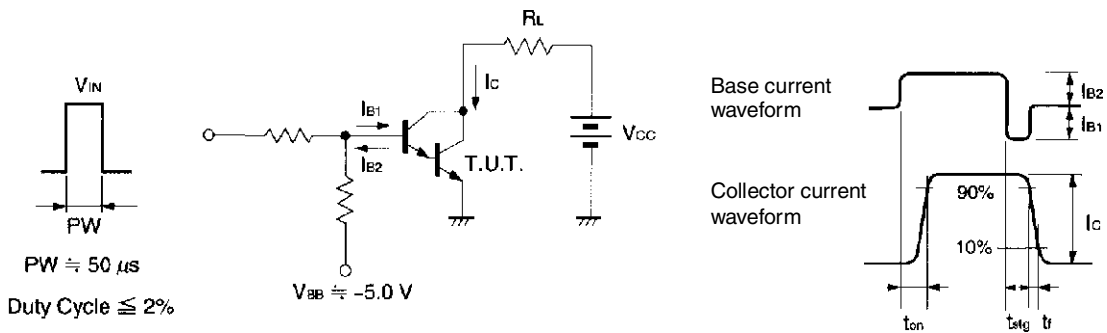
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	I _{CBO}	V _{CB} = 100 V, I _E = 0 A			1.0	μA
Emitter cutoff current	I _{EBO}	V _{EB} = 5.0 V, I _C = 0 A			5.0	mA
DC current gain	h _{FE1}	V _{CE} = 2.0 V, I _C = 1.5 A ^{Note}	2,000		20,000	
DC current gain	h _{FE2}	V _{CE} = 2.0 V, I _C = 3.0 A ^{Note}	1,000			
Collector saturation voltage	V _{CE(sat)}	I _C = 1.5 A, I _B = 1.5 mA ^{Note}			1.5	V
Base saturation voltage	V _{BE(sat)}	I _C = 1.5 A, I _B = 1.5 mA ^{Note}			2.0	V
Turn-on time	t _{on}	I _C = 1.5 A, R _L = 33 Ω, I _{B1} = -I _{B2} = 3.0 mA, V _{CC} ≅ 50 V		0.3		μS
Storage time	t _{stg}	Refer to the switching time (t _{on} , t _{stg} , t _f) test circuit.		1.5		μS
Fall time	t _f			0.4		μS

Note Pulse test PW ≤ 350 μs, duty cycle ≤ 2%

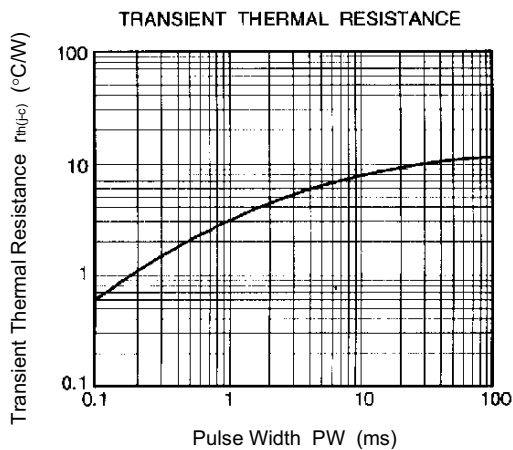
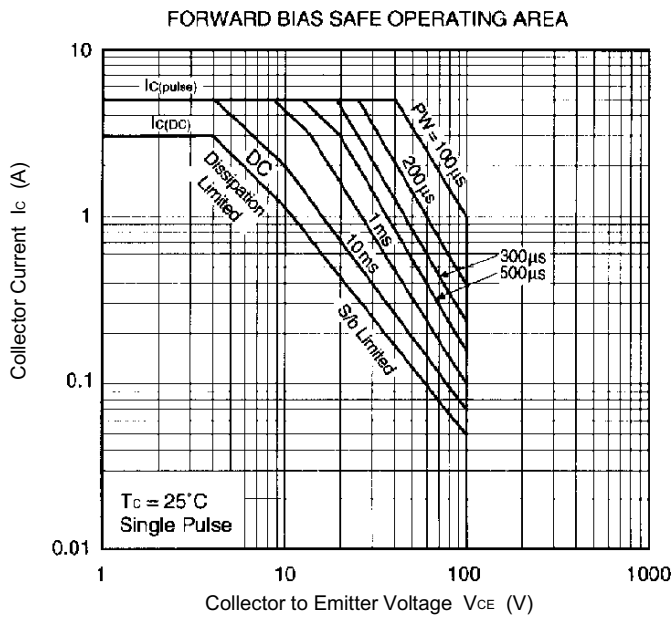
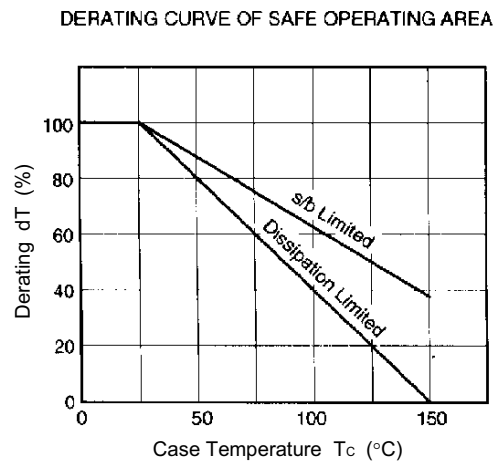
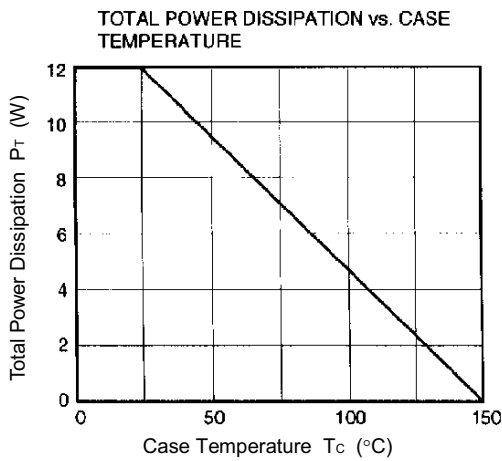
h_{FE} CLASSIFICATION

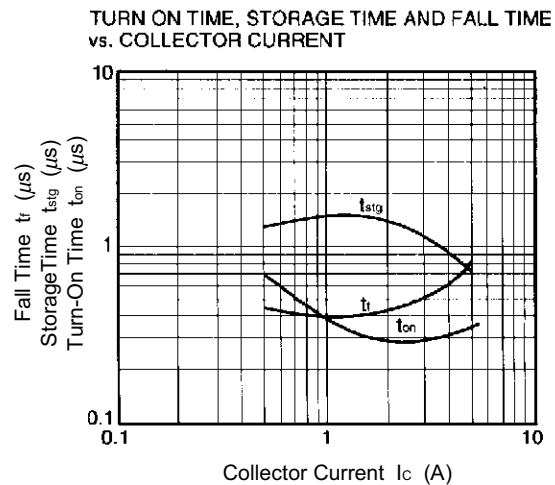
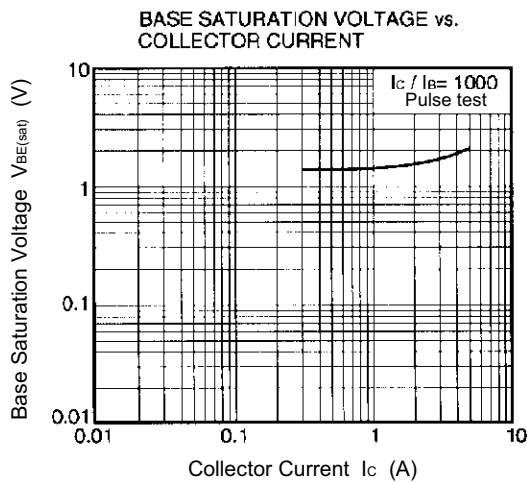
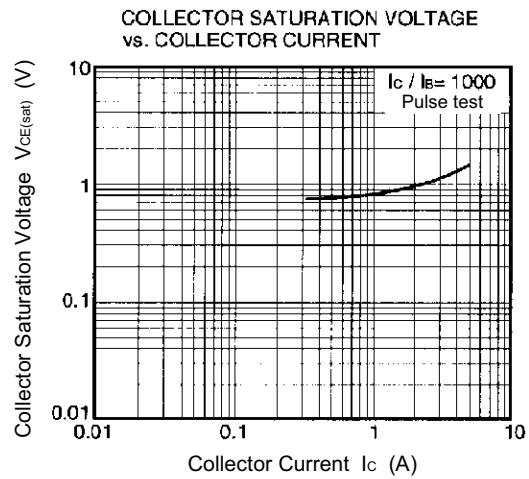
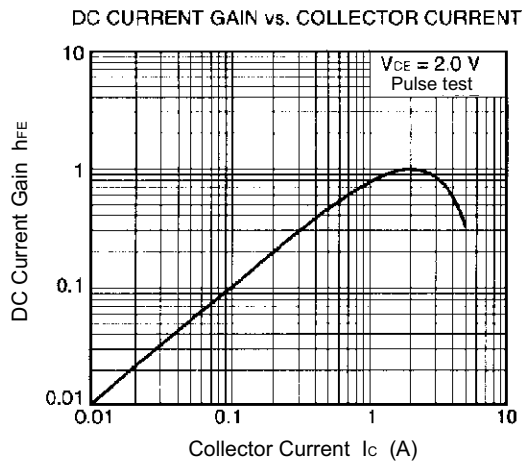
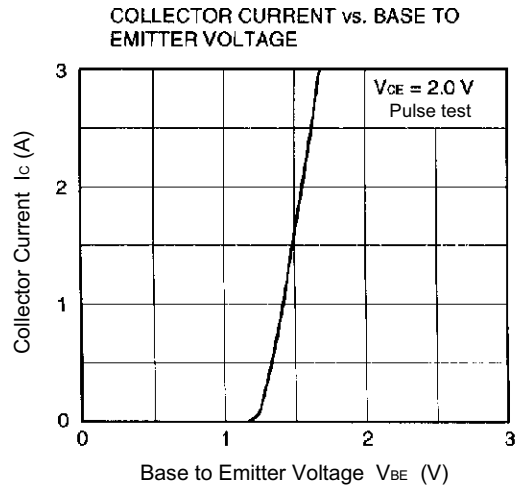
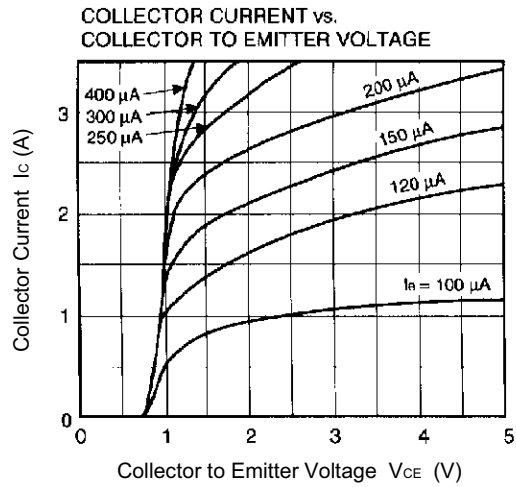
Marking	M	L	K
h _{FE2}	2,000 to 5,000	4,000 to 10,000	8,000 to 20,000

SWITCHING TIME (t_{on}, t_{stg}, t_f) TEST CIRCUIT



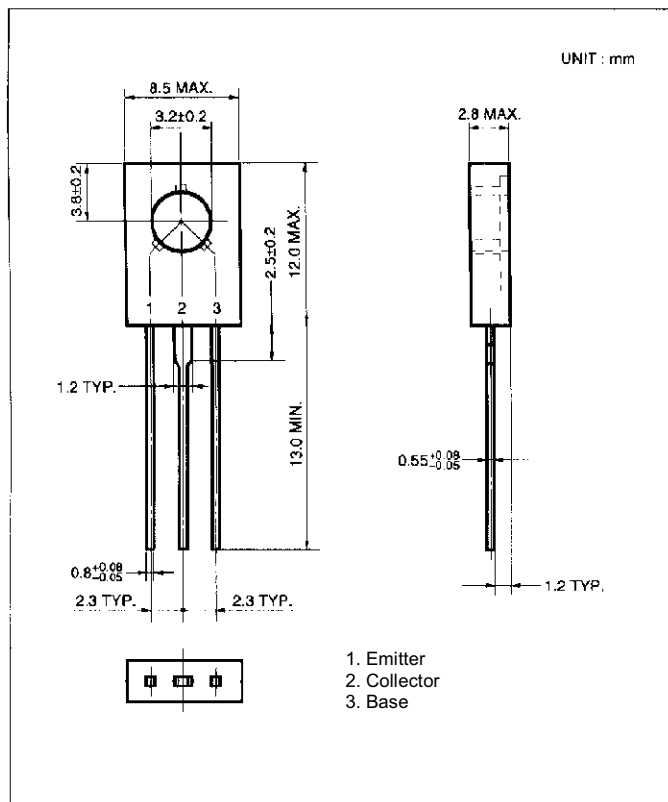
TYPICAL CHARACTERISTICS (T_A = 25°C)





PACKAGE DRAWING (UNIT: mm)

TO-126(MP-5)



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