

NPN SILICON TRIPLE DIFFUSED TRANSISTOR FOR HIGH-SPEED HIGH-VOLTAGE SWITCHING

The 2SC2335 is a mold power transistor developed for high-speed high-voltage switching, and is ideal for use as a driver in devices such as switching regulators, DC/DC converters, and high-frequency power amplifiers.

FEATURES

- Low collector saturation voltage: $V_{CE(sat)} = 1.0 \text{ V MAX. @IC} = 3.0 \text{ A}$
- Fast switching speed: $t_f = 1.0 \mu\text{s MAX. @IC} = 3.0 \text{ A}$
- Wide base reverse-bias SOA: $V_{CEX(SUS)1} = 450 \text{ V MIN. @IC} = 3.0 \text{ A}$

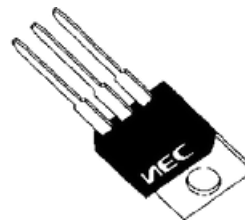
ABSOLUTE MAXIMUM RATINGS (TA = 25°C)

Parameter	Symbol	Conditions	Ratings	Unit
Collector to base voltage	VCBO		500	V
Collector to emitter voltage	VCEO		400	V
Emitter to base voltage	VEBO		7.0	V
Collector current (DC)	IC(DC)		7.0	A
Collector current (pulse)	IC(pulse)	PW ≤ 300 μs, duty cycle ≤ 10%	15	A
Base current (DC)	IB(DC)		3.5	A
Total power dissipation	PT	TC = 25°C	40	W
		TA = 25°C	1.5	W
Junction temperature	Tj		150	°C
Storage temperature	Tstg		-55 to +150	°C

ORDERING INFORMATION

Part No.	Package
2SC233	TO-
5	220AB

(TO-220AB)



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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)

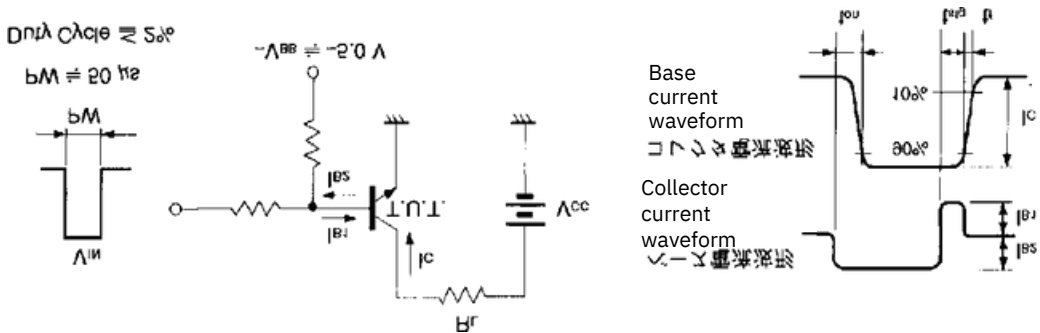
Parameter	Symbol	Conditions	MIN	TYP.	MAX.	Unit
Collector to emitter voltage	VCEO(S)	IC = 3.0 A, IB1 = 0.6 A, L = 1 mH	.			V
Collector to emitter voltage	US)	IC = 3.0 A, IB1 = -IB2 = 0.6 A,	400			V
Collector to emitter voltage	VCEX(S)	VBE(OFF) = -5.0 V, L = 180 μH, clamped	450			V
Collector to emitter voltage	US)1	IC = 6.0 A, IB1 = 2.0 A, -IB2 = 0.6 A,	400			V
Collector to emitter voltage	VCEX(S)	VCB = 400 V, IE = 0 A			10	μA
Collector cutoff current	US)2	VCE = 400 V, RBE = 51 Ω, TA = 125°C			1.	μA
Collector cutoff current	ICBO	VCE = 400 V, VBE(OFF) = -1.5 V			0	μA
Collector cutoff current	ICER	VCE = 400 V, VBE(OFF) = -1.5 V, TA = 125°C			10	mA
Collector cutoff current	ICEX1	VEB = 5.0 V, IC = 0 A			1.	μA
Collector cutoff current	ICEX2	VNoteCE = 5.0 V, IC = 0.1 A	2		0	
Emitter cutoff current	IEBO	VNoteCE = 5.0 V, IC = 1.0 A	0		10	
DC current gain	hFE1	VNoteC = 3.0 A, IB = 0.6 A	2		80	
DC current gain	hFE2	IC = 3.0 A, I = 0.6 ANoteB	0		80	V
DC current gain	hFE3	IC = 3.0 A, RL = 50 Ω,	1		0	V
Collector saturation voltage	VCE(sat)	IB1 = -IB2 = 0.6 A, VCC ≅ 150 V	0		1.	μs
Base saturation voltage	VBE(sat)	Refer to the test circuit.			2	μs
Base saturation voltage	ton				1.	μs

Note: Use test PW ≤ 350 μs, duty cycle ≤ 2%
Storage time tf
Fall time

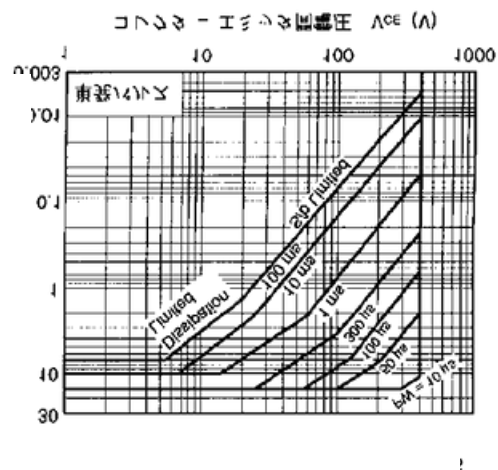
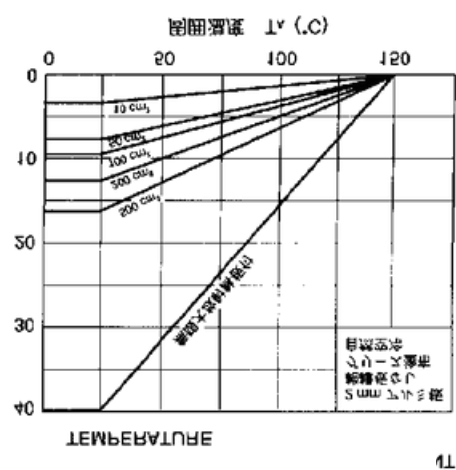
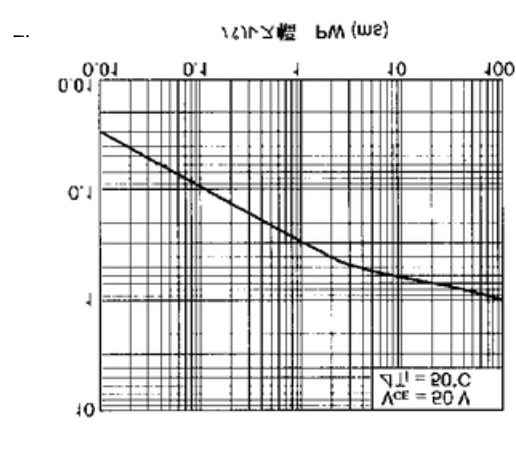
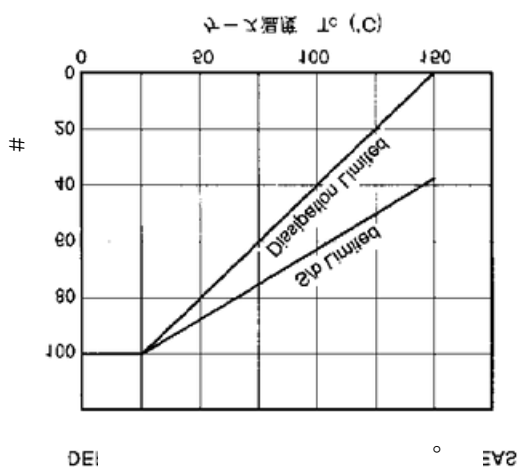
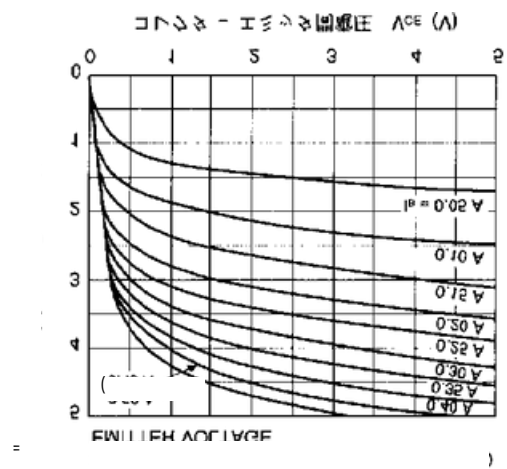
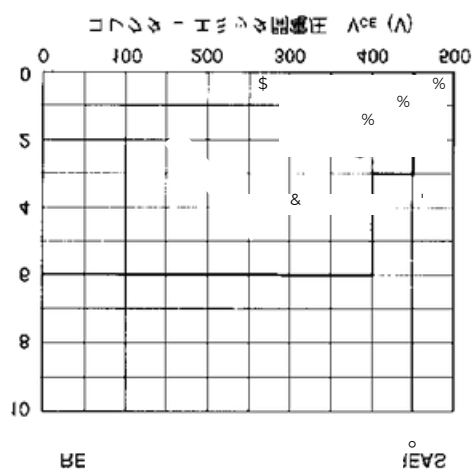
hFE CLASSIFICATION

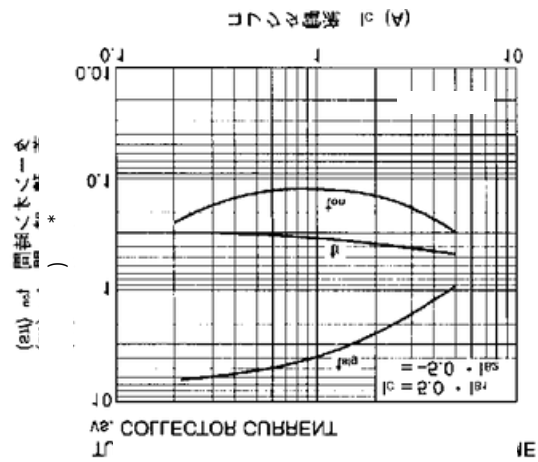
Marking	M	L	K
hFE2	20 to 40	30 to 60	40 to 80

SWITCHING TIME (t on, t stg, tf) TEST CIRCUIT

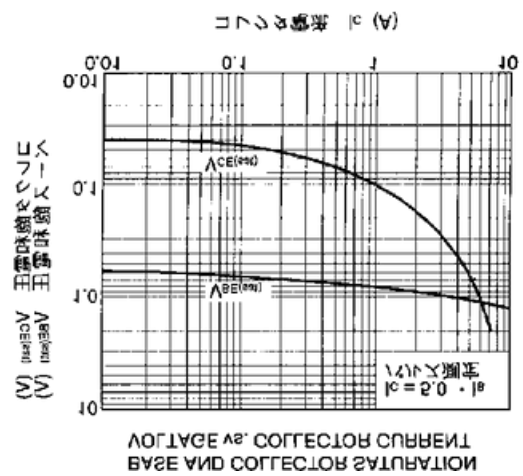
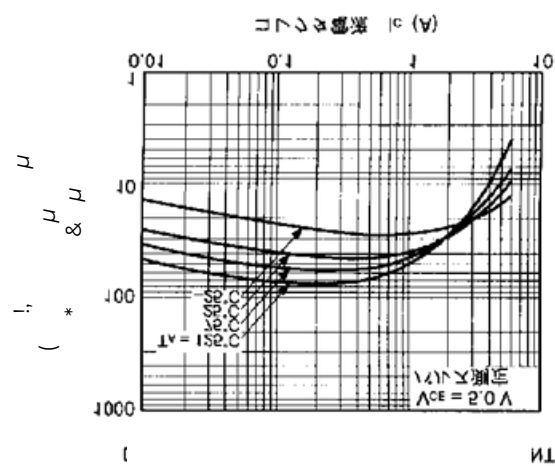


TYPICAL CHARACTERISTICS (TA = 25°C)





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Technical drawing of a 3-pin connector. The drawing includes a top view, a side view, and a cross-sectional view. Dimensions are given in millimeters (mm).

Top View Dimensions:

- Overall width: 10.0 ± 0.1
- Pin pitch: 3.0 ± 0.1
- Pin diameter: 0.8 ± 0.05
- Pin length: 15.2 ± 0.1
- Pin diameter: 0.8 ± 0.05
- Pin length: 15.2 ± 0.1
- Pin diameter: 0.8 ± 0.05
- Pin length: 15.2 ± 0.1

Side View Dimensions:

- Overall height: 10.0 ± 0.1
- Pin diameter: 0.8 ± 0.05
- Pin length: 15.2 ± 0.1
- Pin diameter: 0.8 ± 0.05
- Pin length: 15.2 ± 0.1
- Pin diameter: 0.8 ± 0.05
- Pin length: 15.2 ± 0.1

Pin Configuration Table:

Pin No.	Pin Color	Pin Function
1	Red	Power
2	White	Ground
3	Blue	Signal

TO-550VB (WB-52)

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