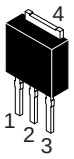
Bipolar Transistor

−50 V, −3 A, Low V_{CE}(sat), PNP Single TP/TP−FA

2SA2126



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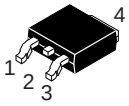

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Features

- Adoption of MBIT Processes
- High Current Capacitance
- Low Collector−to−Emitter Saturation Voltage
- High−speed Switching

Applications

- DC / DC Converter, Relay Drivers, Lamp Drivers, Motor Drivers

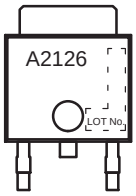
Specifications

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

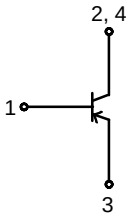
Parameter	Symbol	Conditions	Ratings	Unit
Collector−to−Base Voltage	V_{CBO}		−50	V
Collector−to−Emitter Voltage	V_{CES}		−50	V
Collector−to−Emitter Voltage	V_{CEO}		−50	V
Emitter−to−Base Voltage	V_{EBO}		−6	V
Collector Current	I_C		−3	A
Collector Current (Pulse)	I_{CP}		−6	A
Base Current	I_B		−600	mA
Collector Dissipation	P_C		0.8	W
		Tc = 25°C	15	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

MARKING DIAGRAM



ELECTRICAL CONNECTION



1: Base
2: Collector
3: Emitter
4: Collector

ORDERING INFORMATION

See detailed ordering and shipping information on page 5 of this data sheet.

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ELECTRICAL CHARACTERISTICS (Ta = 25°C)

Parameter	Symbol	Conditions	Ratings			Unit
			Min	Typ	Max	
Collector Cutoff Current	I_{CBO}	V_{CB} = −40 V, I_E = 0 A	−	−	−1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB} = −4 V, I_C = 0 A	−	−	−1	μA
DC Current Gain	h_{FE}	V_{CE} = −2 V, I_C = −100 mA	200	−	560	
Gain−Bandwidth Product	f_T	V_{CE} = −10 V, I_C = −500 mA	−	390	−	MHz
Output Capacitance	Cob	V_{CB} = −10 V, f = 1 MHz	−	24	−	pF
Collector−to−Emitter Saturation Voltage	V_{CE}(sat)1	I_C = −1 A, I_B = −50 mA	−	−135	−270	mV
	V_{CE}(sat)2	I_C = −2 A, I_B = −100 mA	−	−260	−520	mV
Base−to−Emitter Saturation Voltage	V_{BE}(sat)	I_C = −2 A, I_B= −100 mA	−	−0.96	−1.2	V
Collector−to−Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = −10 μA, I_E = 0 A	−50	−	−	V
Collector−to−Emitter Breakdown Voltage	$V_{(BR)CES}$	I_C = −100 μA, R_{BE} = 0	−50	−	−	V
Collector−to−Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = −1 mA, R_{BE} = ∞	−50	−	−	V
Emitter−to−Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = −10 μA, I_C = 0 A	−6	−	−	V
Turn−On Time	t_{on}	See specified Test Circuit.	−	30	−	ns
Storage Time	t_{stg}		−	230	−	ns
Fall Time	t_f		−	18	−	ns

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

Switching Time Test Circuit

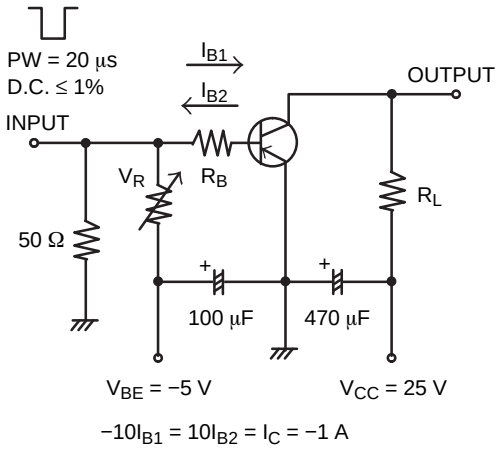

Figure 1. Switching Time Test Circuit

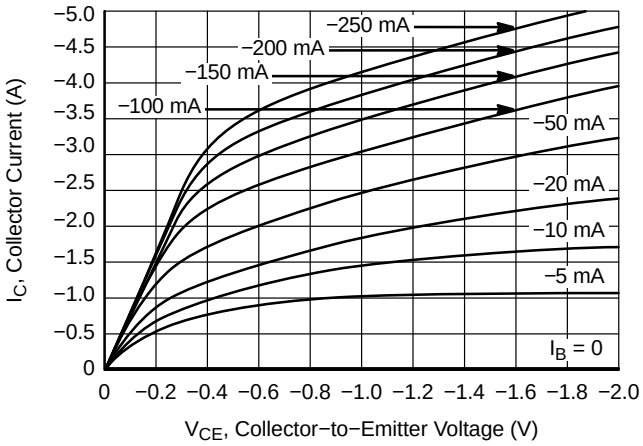

Figure 2. $I_C - V_{CE}$

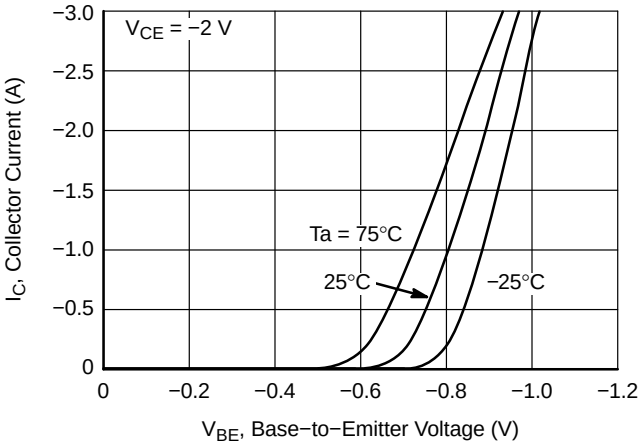

Figure 3. $I_C - V_{BE}$

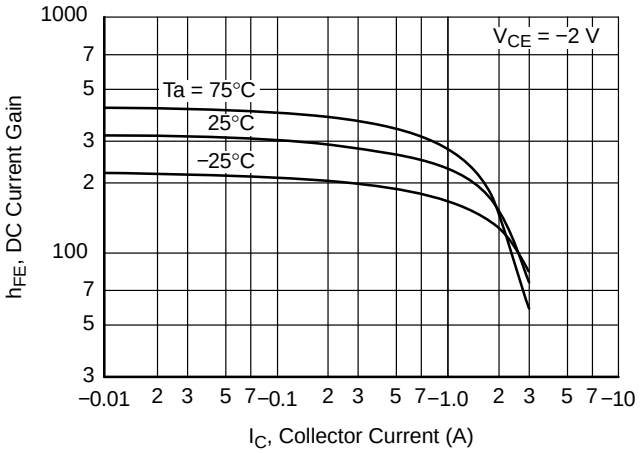

Figure 4. $h_{FE} - I_C$

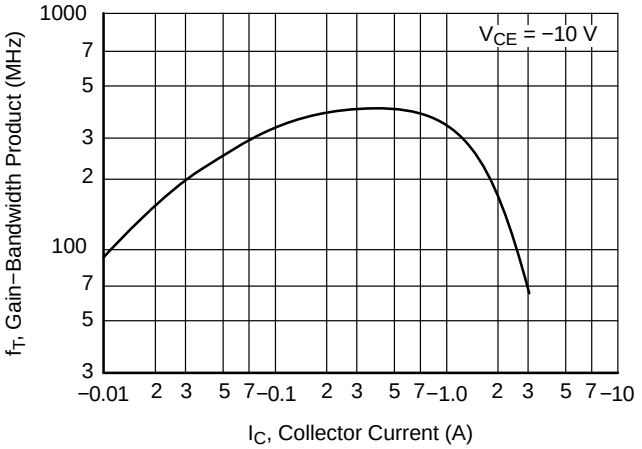

Figure 5. $f_T - I_C$

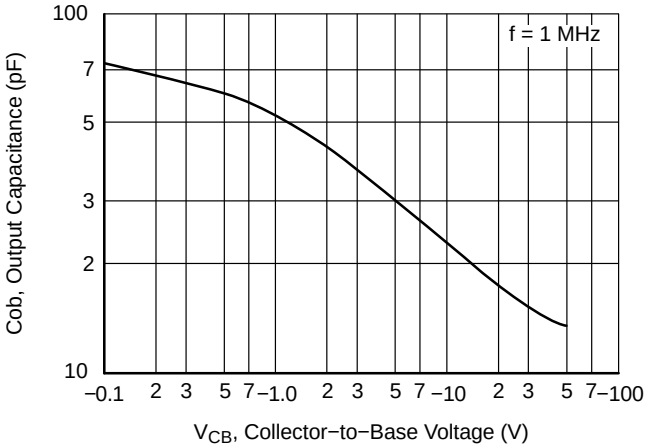

Figure 6. Cob − V_{CB}

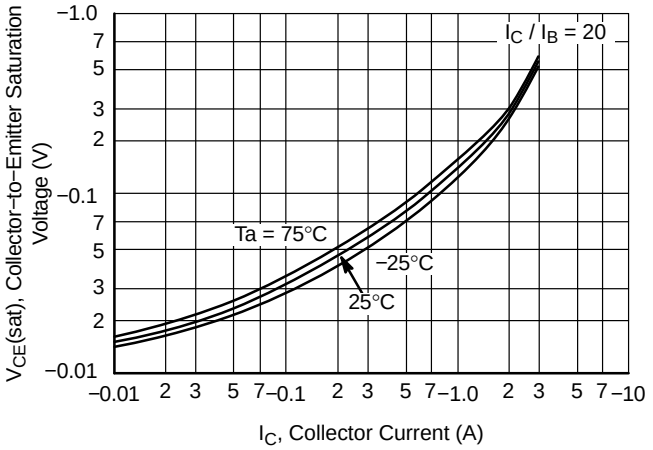

Figure 7. V_{CE}(sat) − I_C

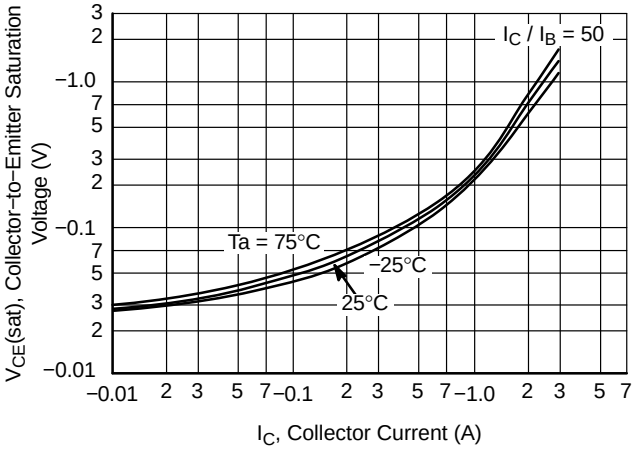

Figure 8. V_{CE}(sat) − I_C

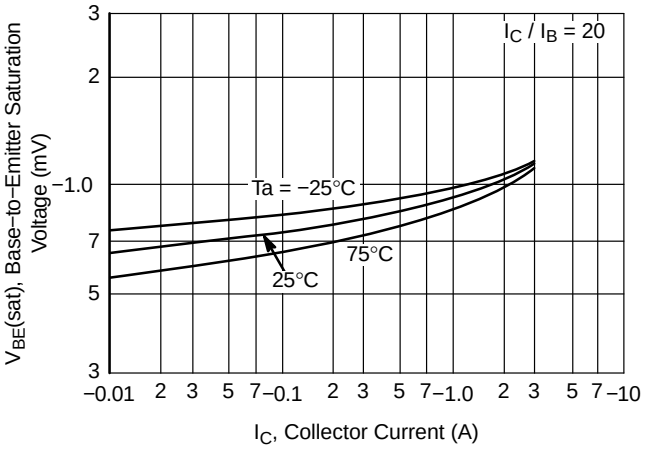

Figure 9. V_{BE}(sat) − I_C

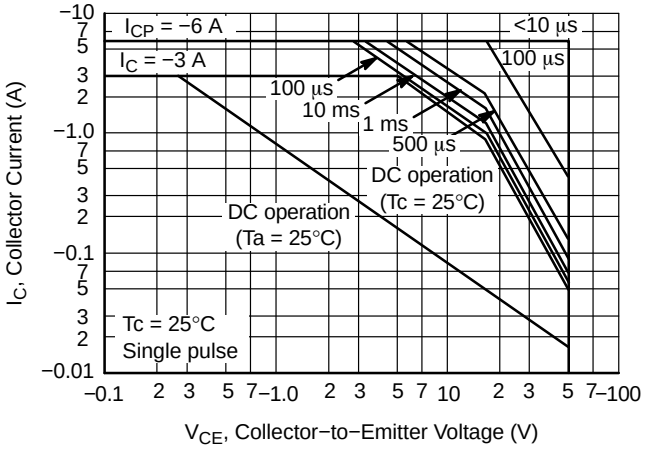

Figure 10. ASO

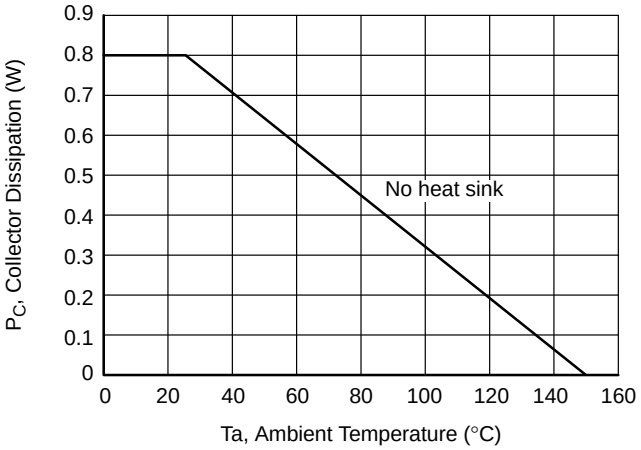

Figure 11. P_C − Ta

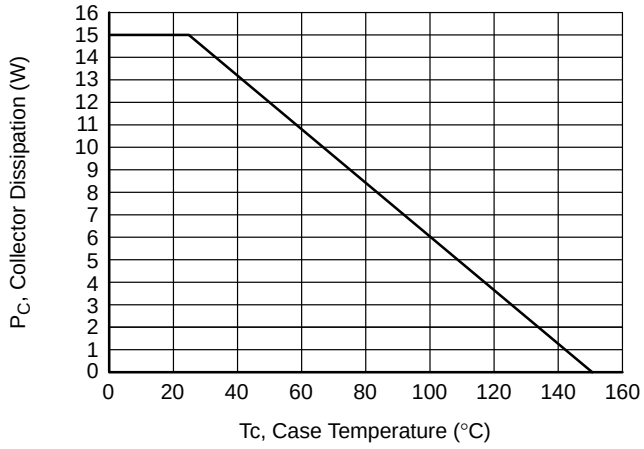

Figure 12. P_C − Tc

ORDERING INFORMATION

Device	Package	Shipping†
2SA2126−H	TP (Pb−Free, Halogen Free)	500 Units / Bag
2SA2126−TL−E	TP−FA (Pb−Free)	700 Units / Tape & Reel
2SA2126−TL−H	TP−FA (Pb−Free, Halogen Free)	700 Units / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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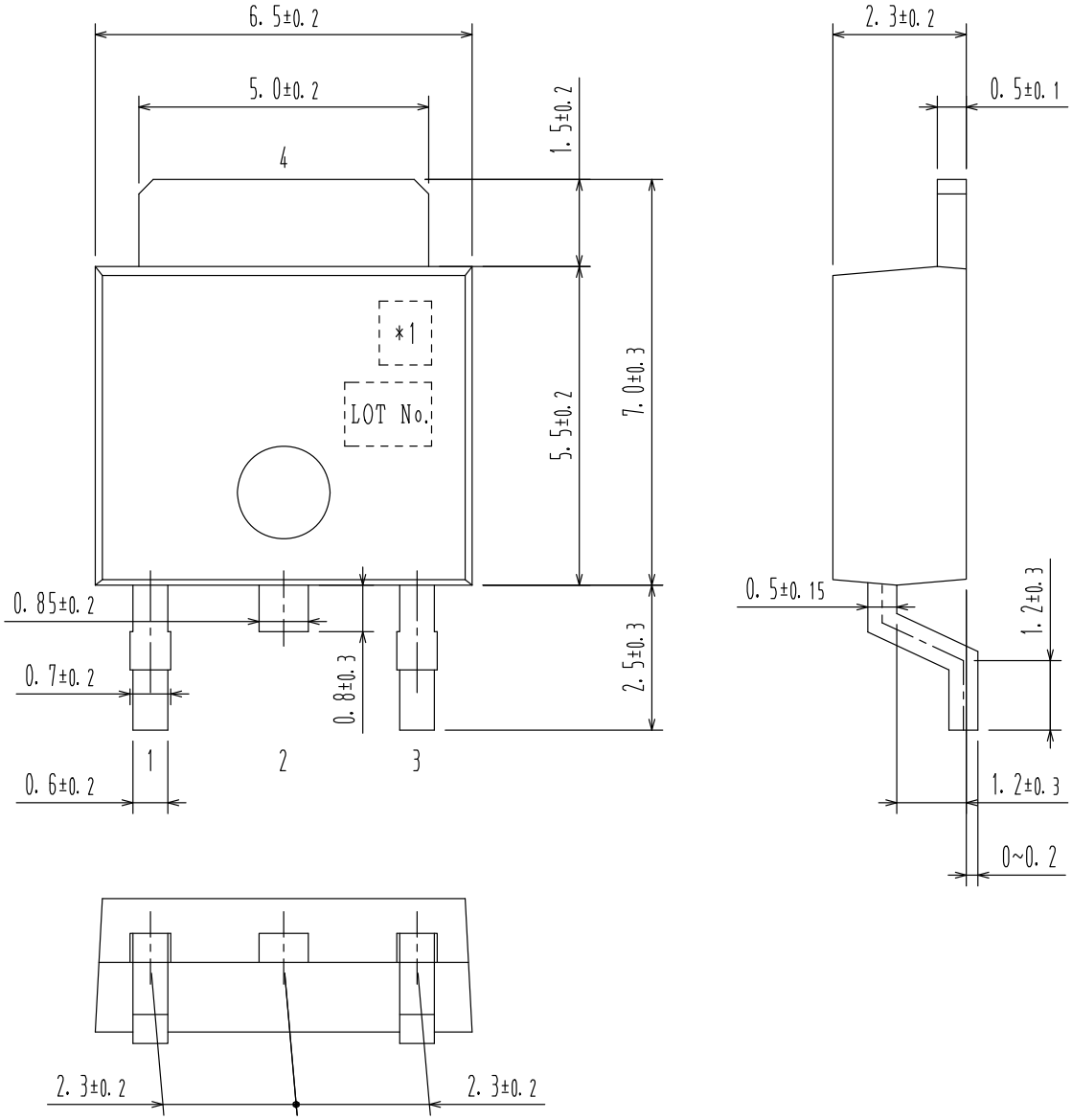

Pin 2 is idle pin with electrical designation only carried.

*1:Lot indication

1:
2:
3:
4:

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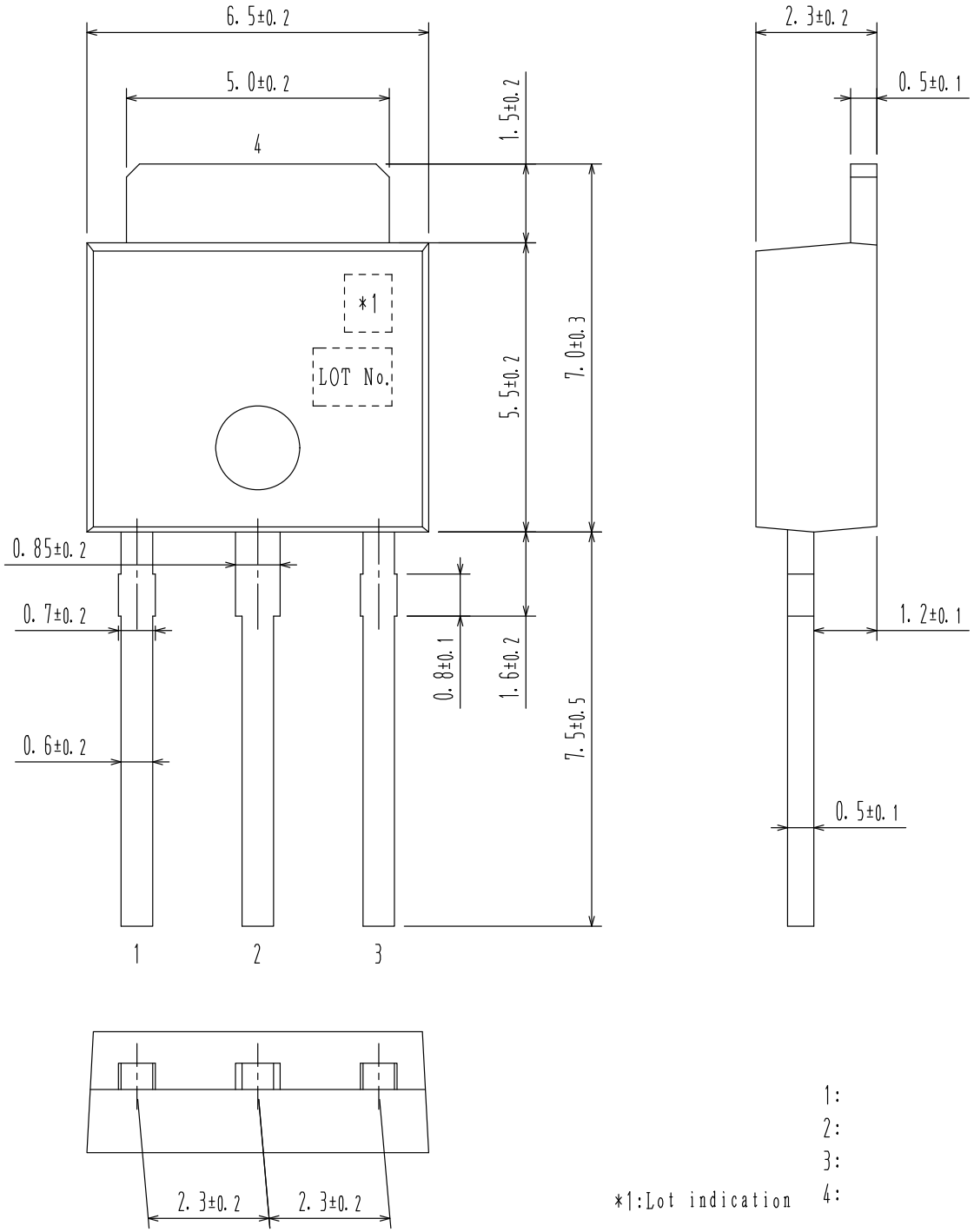

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