

**2SD2050****Driver Applications****Applications**

- Motor drivers, printer hammer drivers, relay drivers, voltage regulator control.

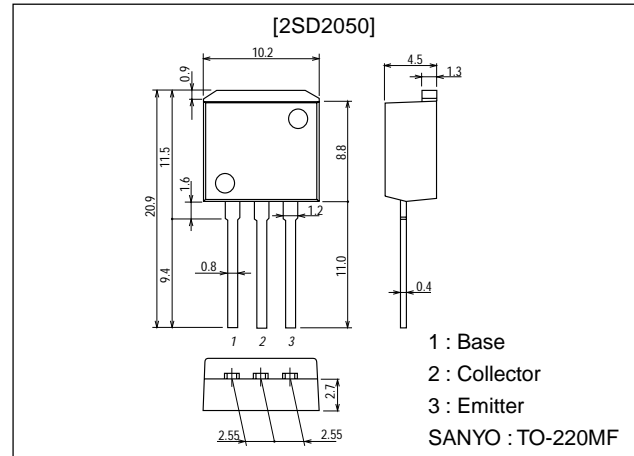
**Features**

- Suitable for sets whose height is restricted.
- High DC current gain.
- Large current capacity and wide ASO.

**Package Dimensions**

unit:mm

2049C

**Specifications****Absolute Maximum Ratings at Ta = 25°C**

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		110	V
Collector-to-Emitter Voltage	$V_{CEO}$		100	V
Emitter-to-Base Voltage	$V_{EBO}$		6	V
Collector Current	$I_C$		8	A
Collector Current (Pulse)	$I_{CP}$		12	A
Collector Dissipation	$P_C$		1.65	W
		$T_c=25^\circ\text{C}$	40	W
Junction Temperature	$T_j$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

**Electrical Characteristics at Ta = 25°C**

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=80\text{V}, I_E=0$			0.1	mA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$			3.0	mA
DC Current Gain	$h_{FE}$	$V_{CE}=3\text{V}, I_C=4\text{mA}$	1500	4000		
Gain-Bandwidth Product	$f_T$	$V_{CE}=5\text{V}, I_C=4\text{mA}$		20		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=4\text{mA}, I_B=8\text{mA}$		0.9	1.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=4\text{mA}, I_B=8\text{mA}$			2.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=5\text{mA}, I_E=0$	110			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=50\text{mA}, R_{BE}=\infty$	100			V

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**SANYO Electric Co., Ltd. Semiconductor Business Headquarters**

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

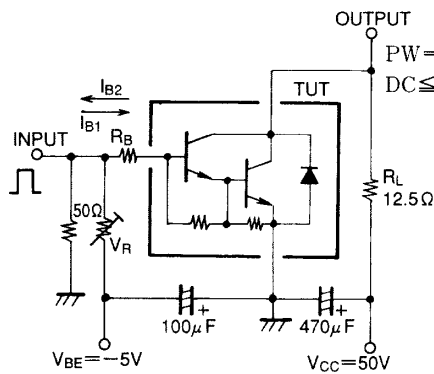
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# 2SD2050

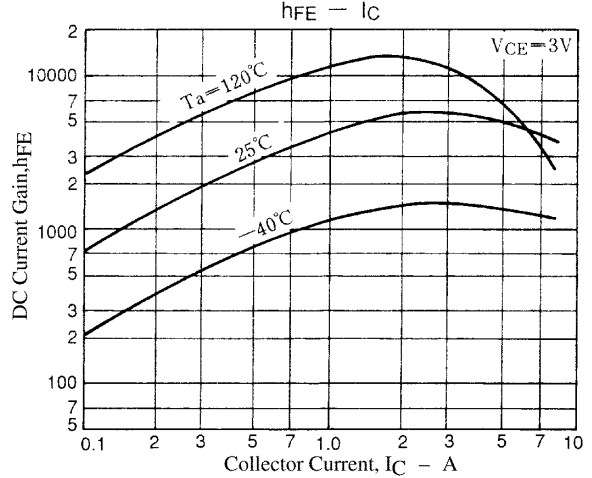
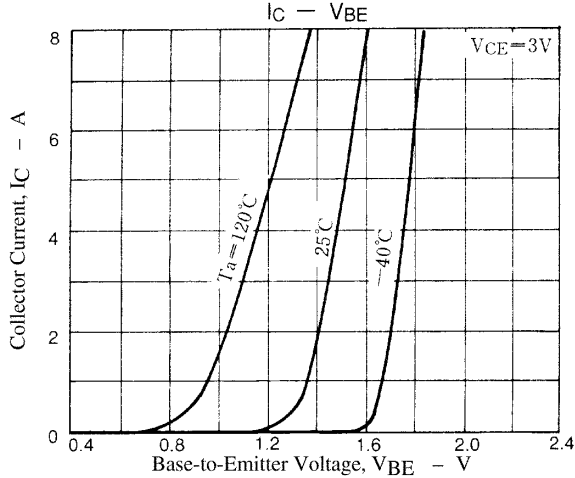
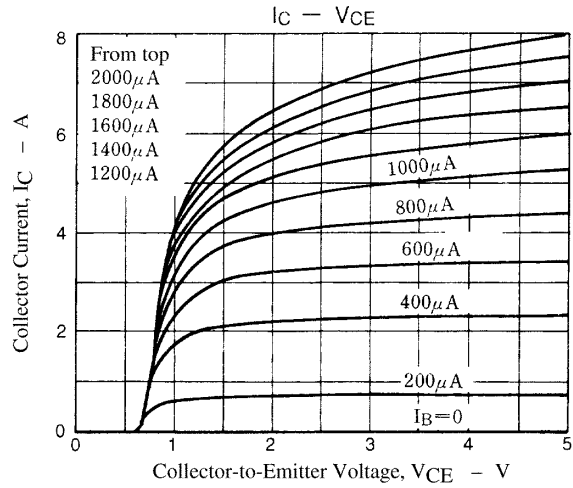
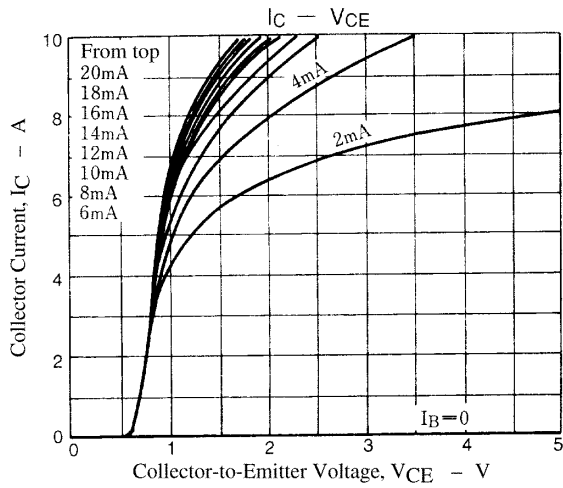
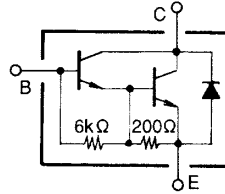
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Turn-ON Time	$t_{on}$	See specified test circuit.		0.6		$\mu s$
Storage Time	$t_{stg}$	See specified test circuit.		4.8		$\mu s$
Fall Time	$t_f$	See specified test circuit.		1.6		$\mu s$

## Switching Time Test Circuit

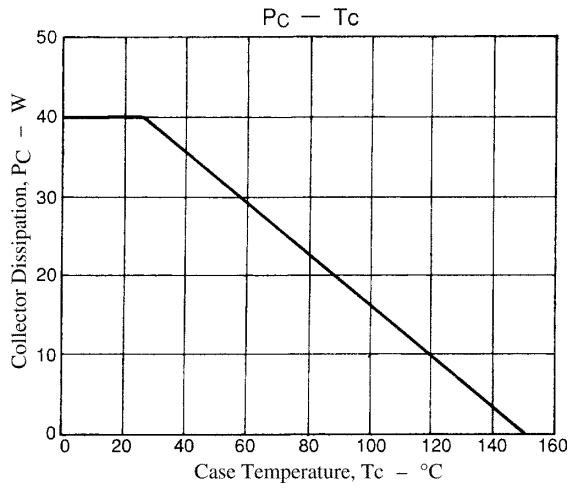
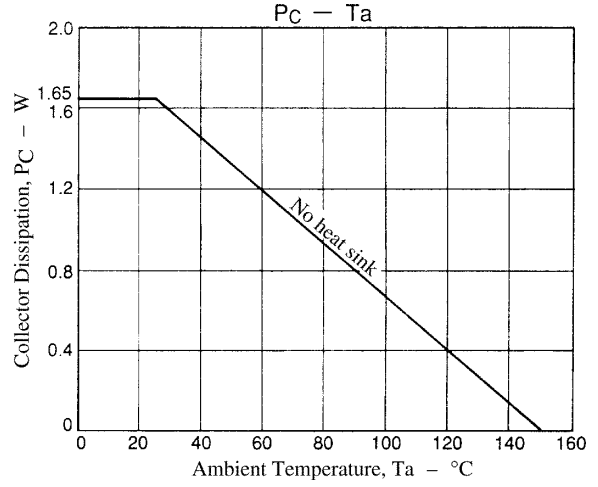
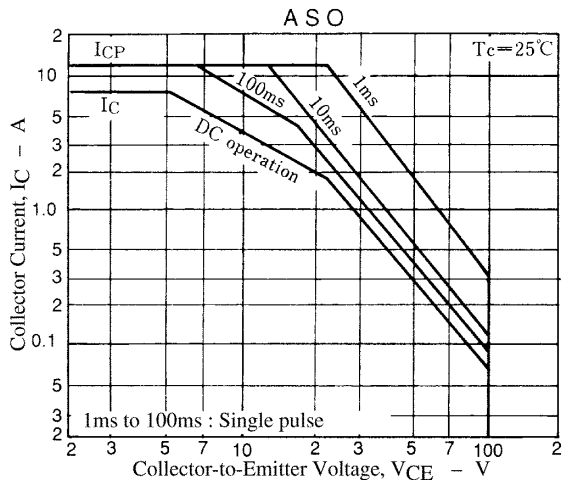
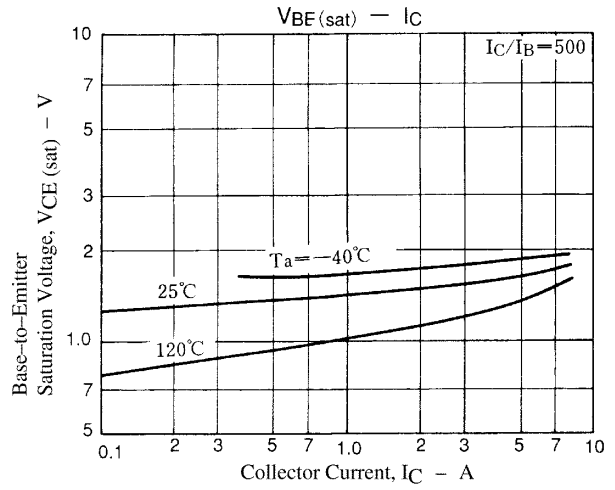
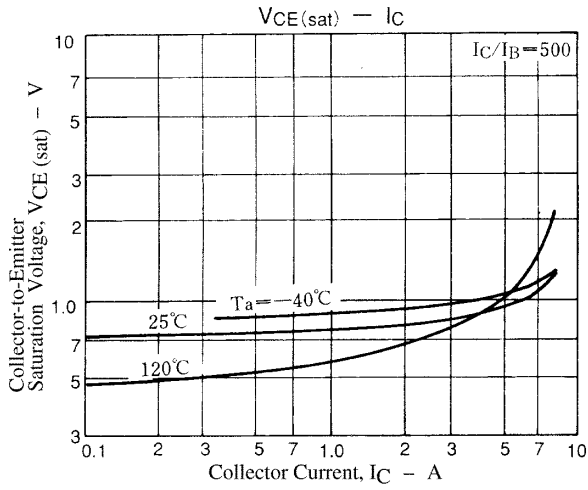
$$500I_{B1} = -500I_{B2} = I_C = 4A$$



## Electrical Connection



# 2SD2050



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