

**2SC3705****Printer Driver Applications****Applications**

- Switching of L load (motor drivers, printer drivers, relay drivers).

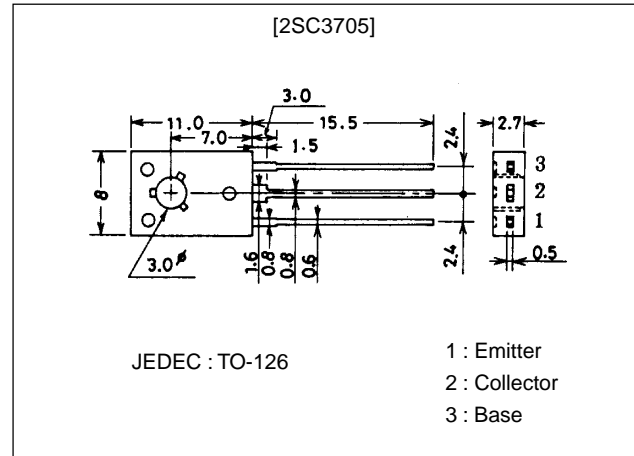
Features

- High DC current gain.
- Large current capacity and wide ASO.
- Contains a Zener diode across collector and base.

Package Dimensions

unit:mm

2009B

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}	With Zener diode (60±10V)	50	V
Collector-to-Emitter Voltage	V_{CEO}	With Zener diode (60±10V)	50	V
Emitter-to-Base Voltage	V_{EBO}		6	V
Collector Current	I_C		1.2	A
Collector Current (Pulse)	I_{CP}		2.5	A
Base Current	I_B		0.25	A
Collector Dissipation	P_C		1	W
		$T_c=25^\circ\text{C}$	10	W
Junction Temperature	T_j		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=40\text{V}, I_E=0$			19	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			10	μA
DC Current Gain	h_{FE}	$V_{CE}=5\text{V}, I_C=0.5\text{mA}$	1000	4000		
Gain-Bandwidth Product	f_T	$V_{CE}=5\text{V}, I_C=0.5\text{mA}$		180		MHz
Inductive Load Handling Capability	Es/b	$L=100\text{mH}, R_{BE}=100\Omega$	15			mJ
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=500\text{mA}, I_B=2\text{mA}$		1.0	1.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=500\text{mA}, I_B=2\text{mA}$			2.0	V

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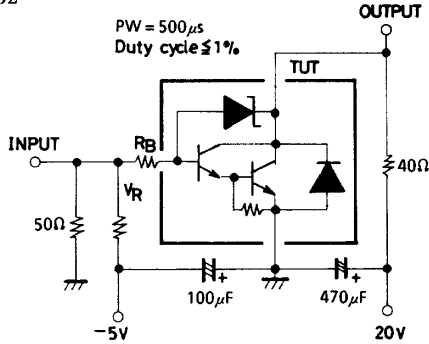
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=0.1mA, I_E=0$	50	60	70	V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	50	60	70	V
Turn-ON Time	t_{on}	See specified test circuit.		0.2		μs
Storage Time	t_{stg}	See specified test circuit.		2.2		μs
Fall Time	t_f	See specified test circuit.		0.4		μs

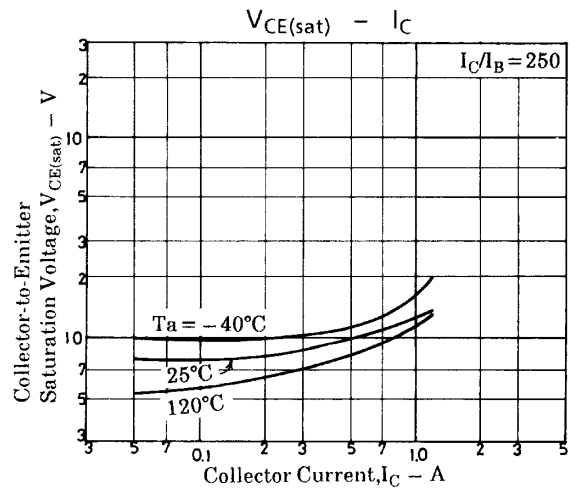
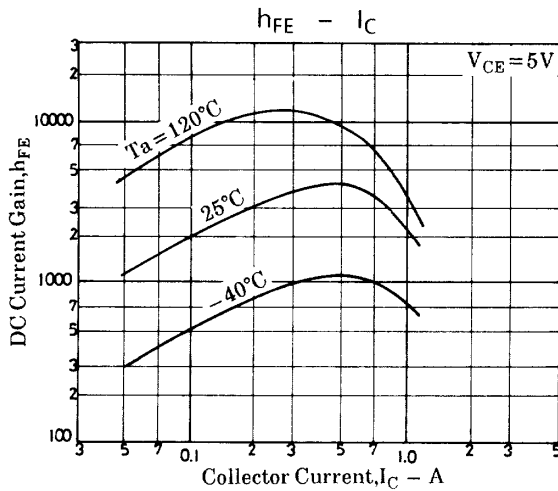
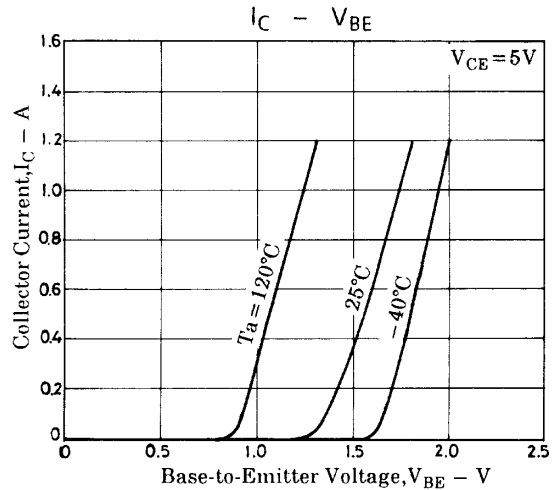
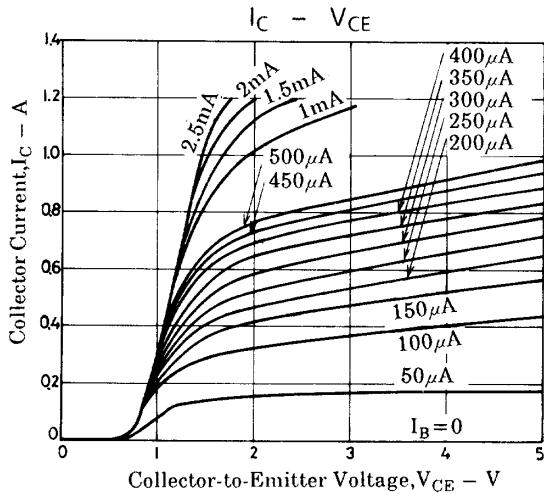
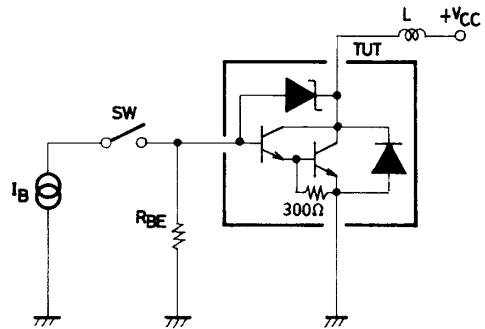
Switching Time Test Circuit

$$I_{B1} = -I_{B2} = 2mA$$

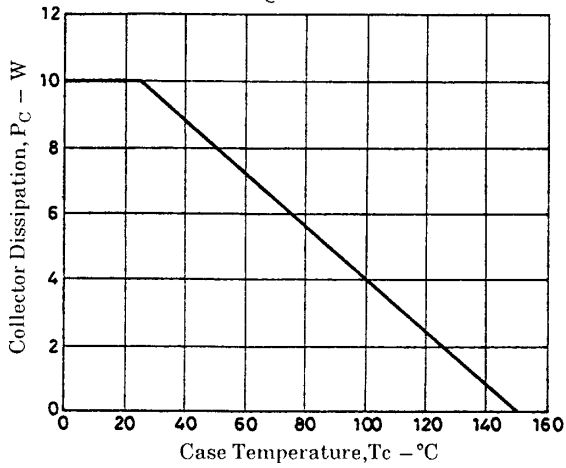
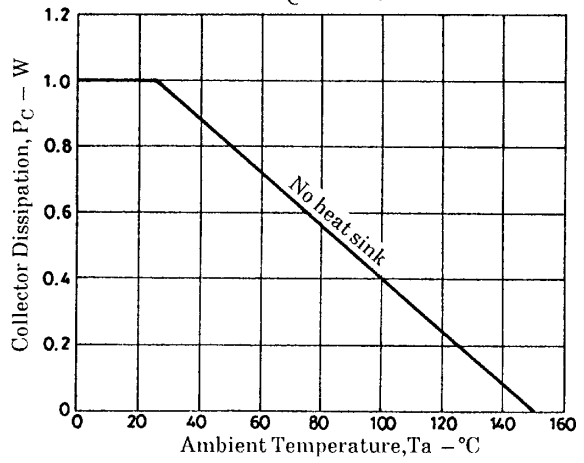
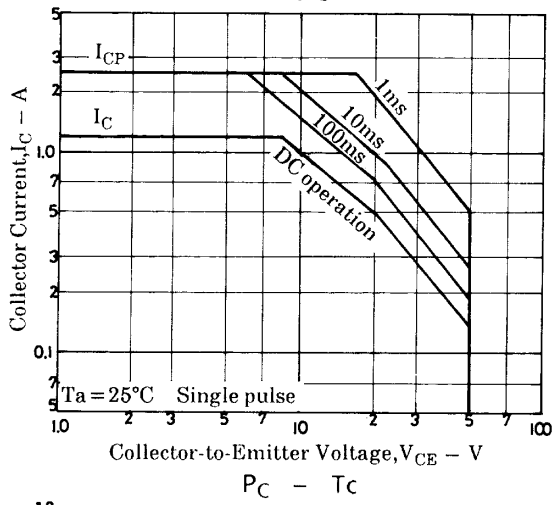
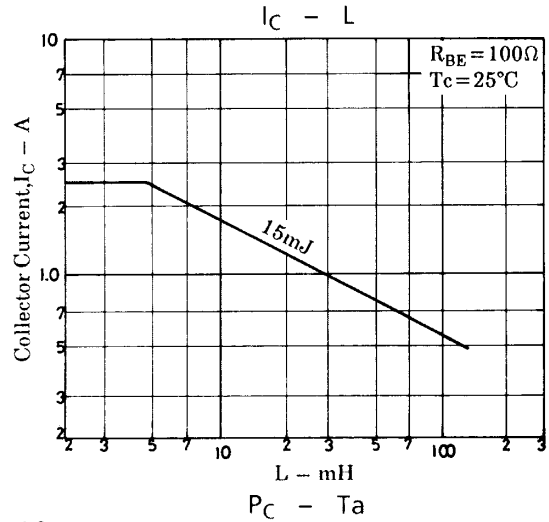
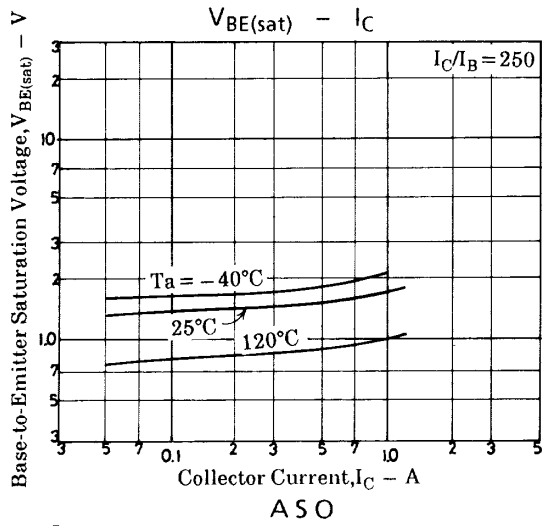


Es/b Test Circuit

$$V_{CC} = 20V, R_{BE} = 100\Omega$$



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