

**2SC4169****Driver Applications****Applications**

- Suitable for use in switching of L load (motor drivers, printer hammer drivers, relay drivers).

**Features**

- On-chip Zener diode of  $60\pm 10V$  between collector and base.
- Uniformity in collector-to-base voltage.
- High DC current gain :  $h_{FE}=1000$  min ( $V_{CE}=5V$ ,  $I_C=500mA$ ).
- Wide ASO.
- High inductive load handling capability :  $Es/b=15mJ$  (min).

**Specifications****Absolute Maximum Ratings** at  $T_a = 25^\circ C$ 

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CBO}$		50*	V
Collector-to-Emitter Voltage	$V_{CEO}$		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
Collector Dissipation	$P_C$		1	mW
Junction Temperature	$T_J$		150	$^\circ C$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ C$

\* : On-chip Zener diode of  $60\pm 10V$ **Electrical Characteristics** at  $T_a = 25^\circ C$ 

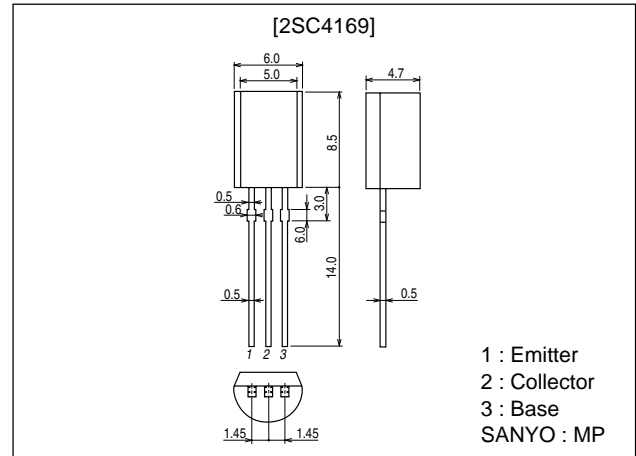
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=40V, I_E=0$			10	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=5V, I_C=0$			10	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE}=5V, I_C=500mA$	1000	4000		
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$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

Continued on next page.

**Package Dimensions**

unit:mm

2006B



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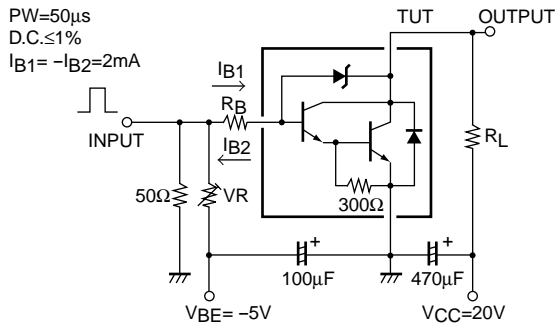
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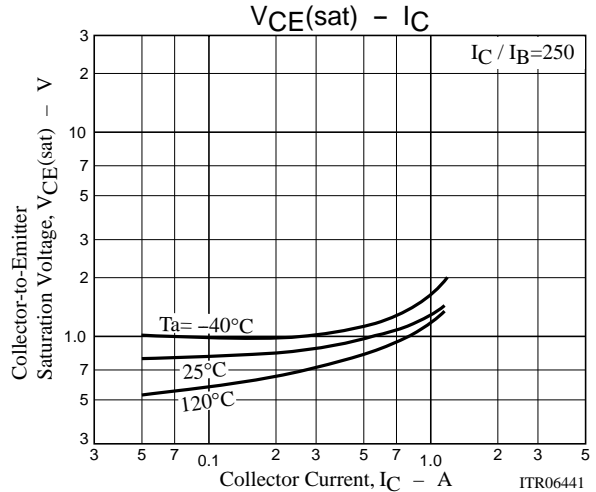
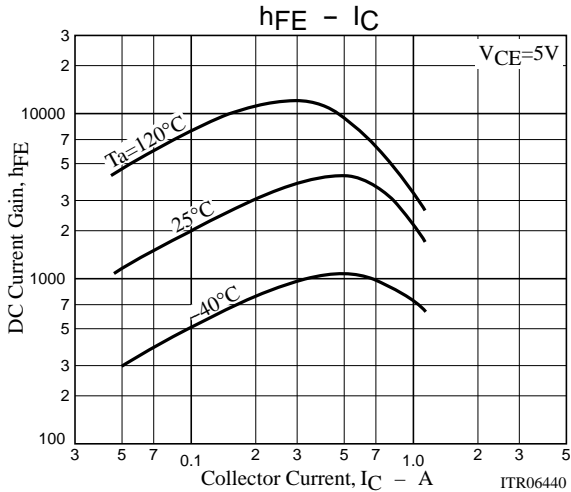
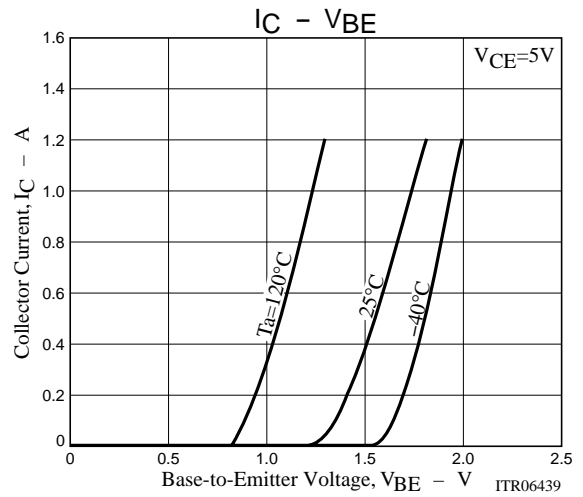
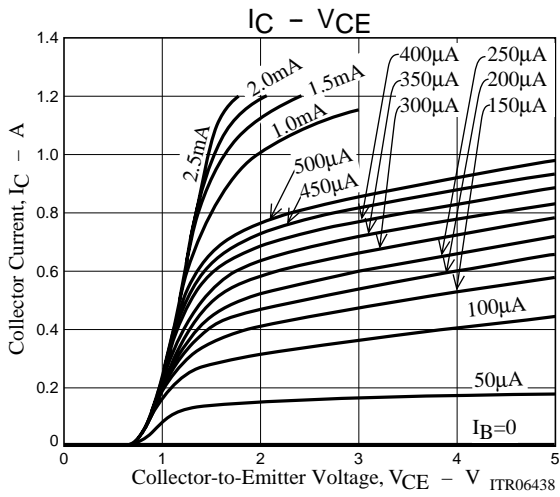
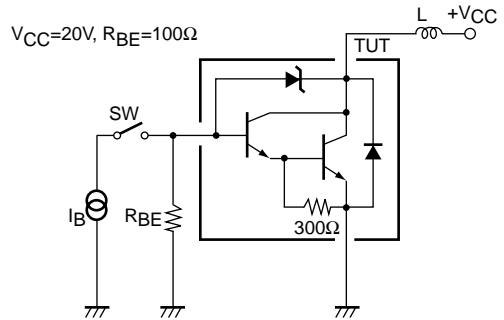
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	50	60	70	V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1mA, R_{BE}=\infty$	50	60	70	V
Turn-ON Time	$t_{on}$	See specified Test Circuit.		0.2		$\mu s$
Storage Time	$t_{stg}$	See specified Test Circuit.		2.2		$\mu s$
Fall Time	$t_f$	See specified Test Circuit.		0.4		$\mu s$

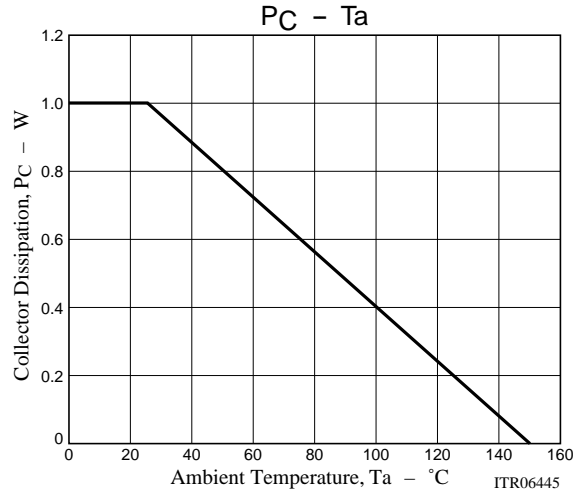
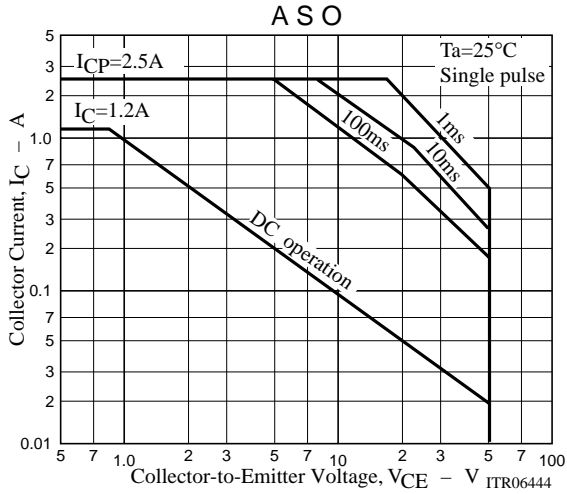
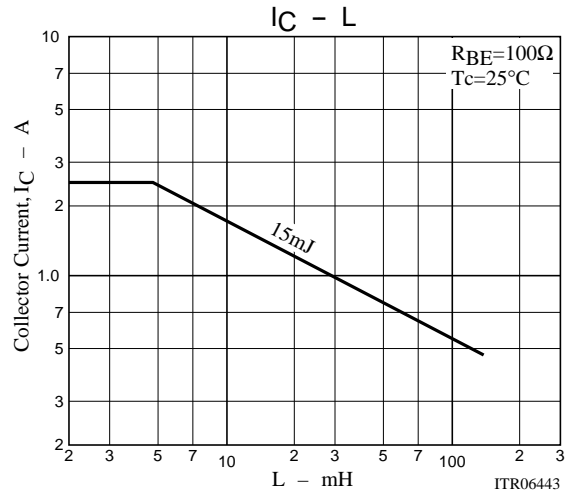
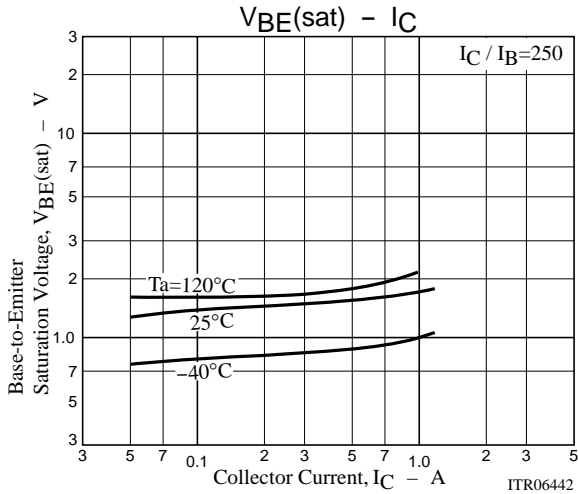
## Switching Time Test Circuit



$$I_C=250I_{B1}=-250I_{B2}=500mA$$

## Es/b Test Circuit





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