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ON Semiconductor DATA SHEET

2SC5832 — NPN Epitaxial Planar Silicon Transistor Driver Applications

Applications

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

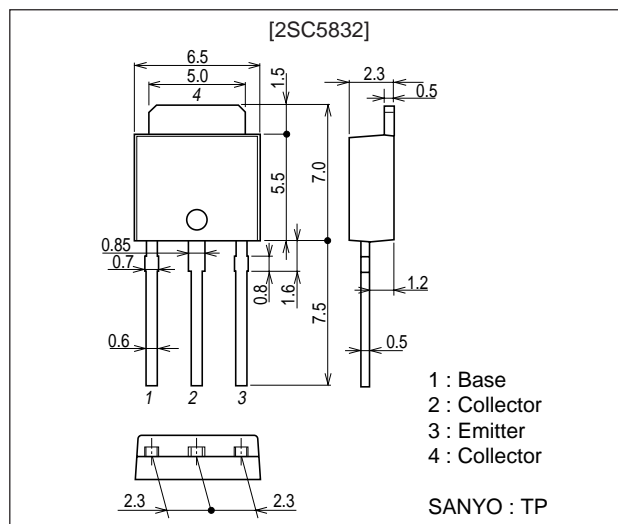
Features

- High DC current gain.
- Wide ASO.
- On-chip zener diode of $65 \pm 10V$ between collector and base.
- Uniformity in collector-to-base voltage.
- Large inductive load handling capability.

Package Dimensions

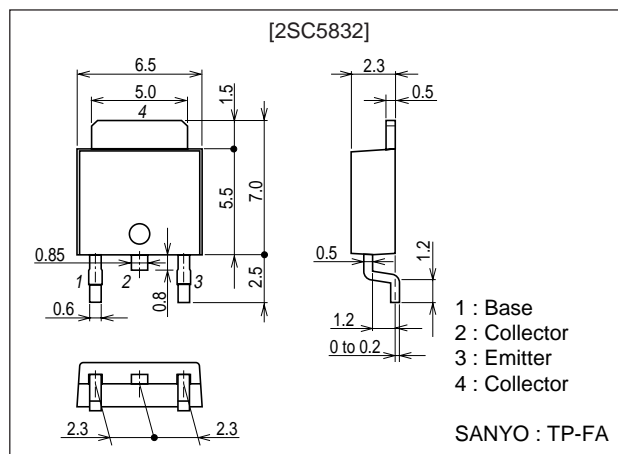
unit : mm

2045B



unit : mm

2044B



Specifications

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

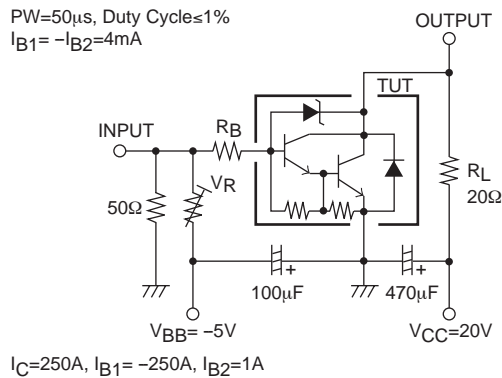
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}	On-chip zener diode($65\pm 10\text{V}$)	55	V
Collector-to-Emitter Voltage	V_{CEO}	On-chip zener diode($65\pm 10\text{V}$)	55	V
Emitter-to-Base Voltage	V_{EBO}		6	V
Collector Current	I_C		2	A
Collector Current (Pulse)	I_{CP}		4	A
Collector Dissipation	P_C		1.0	W
		$T_c=25^\circ\text{C}$	10	W
Junction Temperature	T_j		150	$^\circ\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=40\text{V}$, $I_E=0$			10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5\text{V}$, $I_C=0$			2	mA
DC Current Gain	h_{FE}	$V_{CE}=5\text{V}$, $I_C=1\text{A}$	1000	4000		
Gain-Bandwidth Product	f_T	$V_{CE}=5\text{V}$, $I_C=1\text{A}$		180		MHz
Inductive Load	E_s / b	$L=100\text{mH}$, $R_{BE}=100\Omega$	25			mJ
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1\text{A}$, $I_B=4\text{mA}$		1.0	1.5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1\text{A}$, $I_B=4\text{mA}$			2.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}$, $I_E=0$	55	65	75	V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}$, $R_{BE}=\infty$	55	65	75	V
Turn-ON Time	t_{on}	See specified Test Circuit.		0.2		μs
Storage Time	t_{stg}	See specified Test Circuit.		3.5		μs
Fall Time	t_f	See specified Test Circuit.		0.5		μs

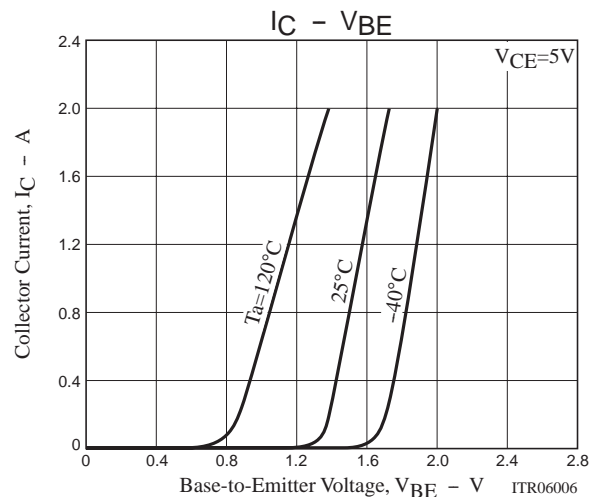
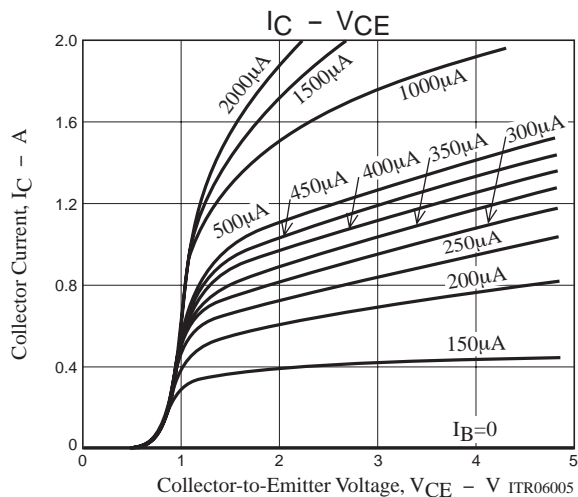
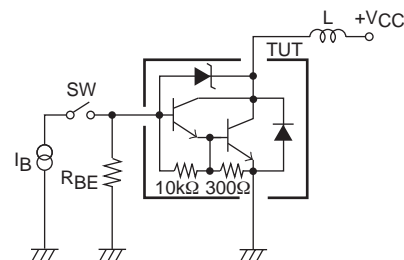
Switching Time Test Circuit

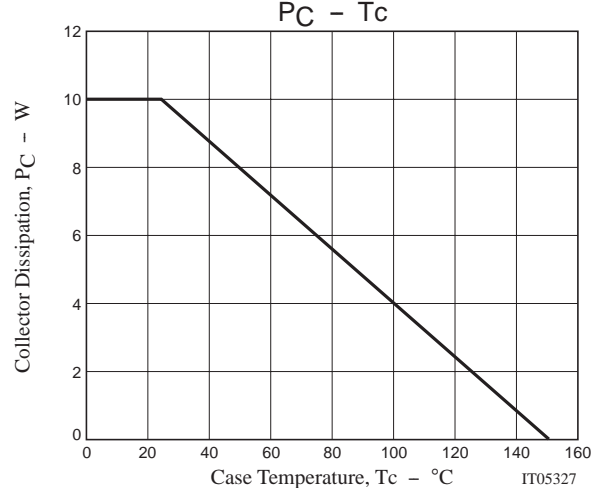
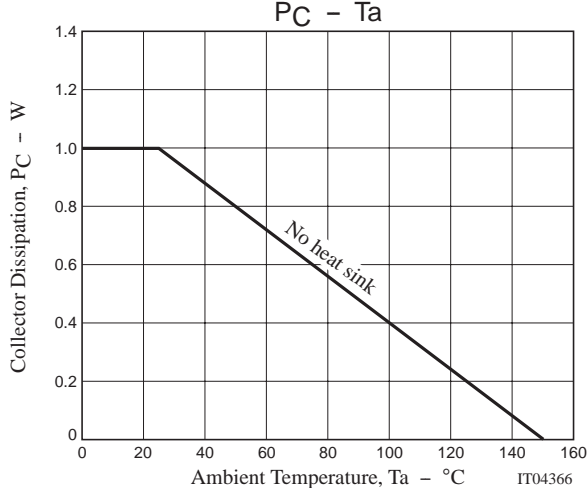
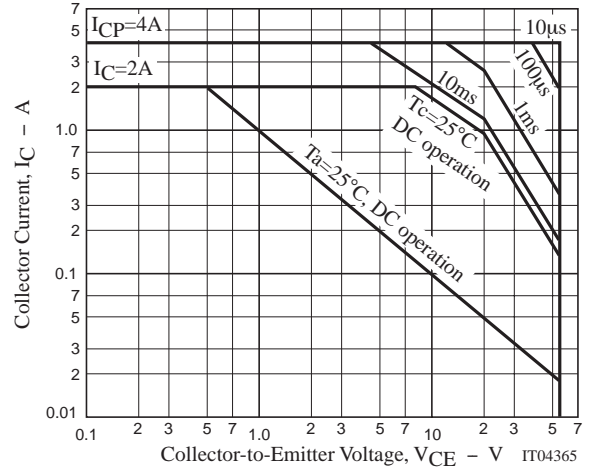
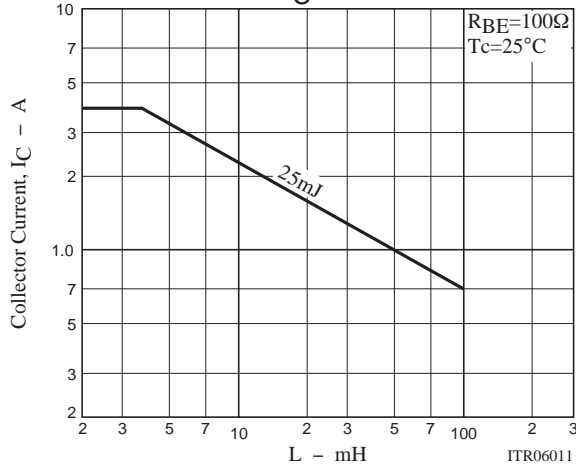
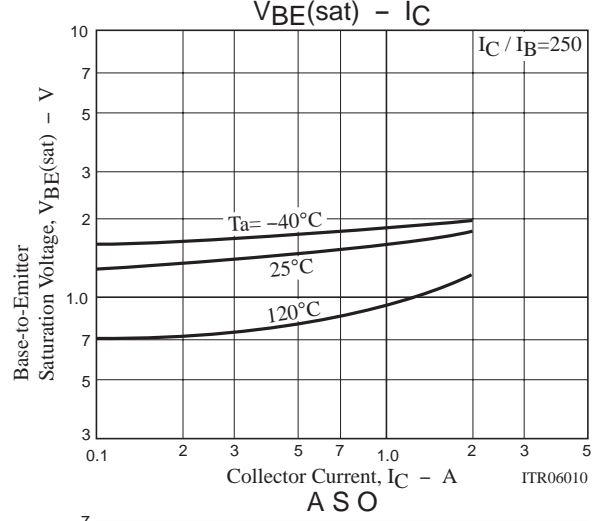
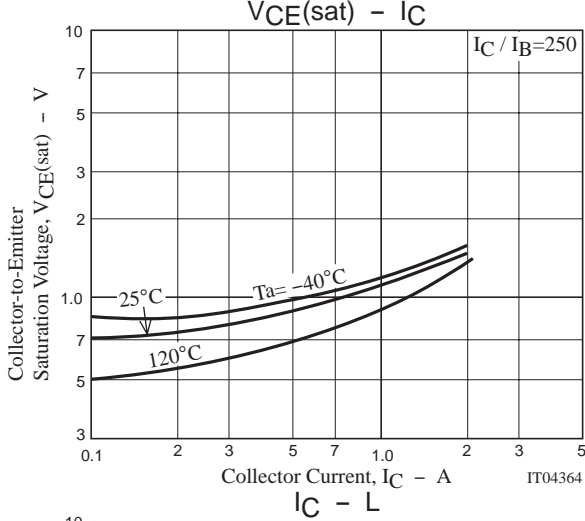
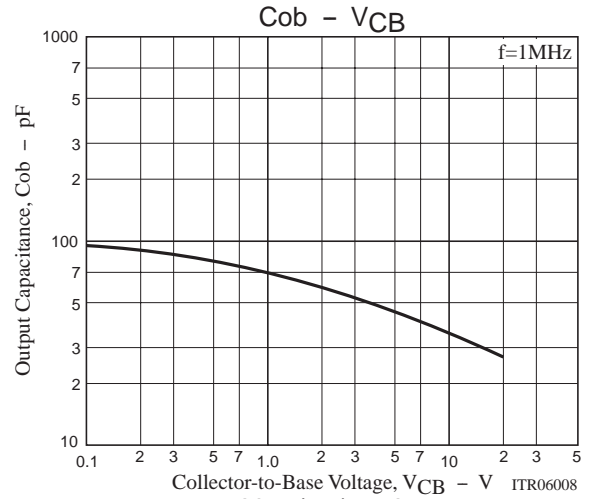
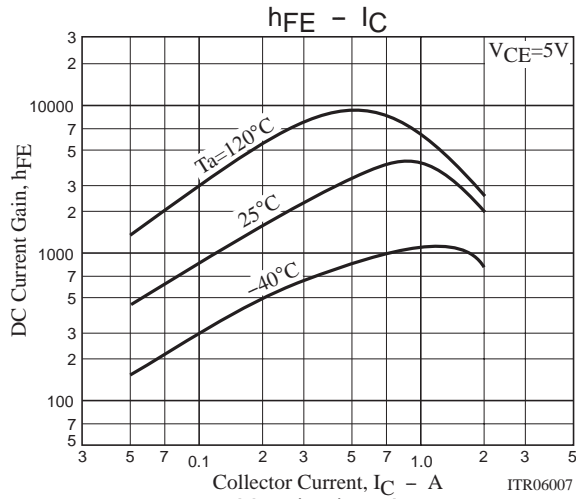
$PW=50\mu\text{s}$, Duty Cycles $\leq 1\%$
 $I_{B1} = -I_{B2} = 4\text{mA}$



E_s / b Test Circuit

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





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