2SD1628

Applications

- Strobe DC-DC converters, relay drivers, hammer drivers, lamp drivers, motor drovers

Features

- Low saturation voltage
- Large current capacity
- Very small size making it easy to provide highdensity, small-sized hybrid IC's
- Halogen free compliance
- Highh h_{FE}

Specifications

Absolute Maximum Ratings at Ta=25°C

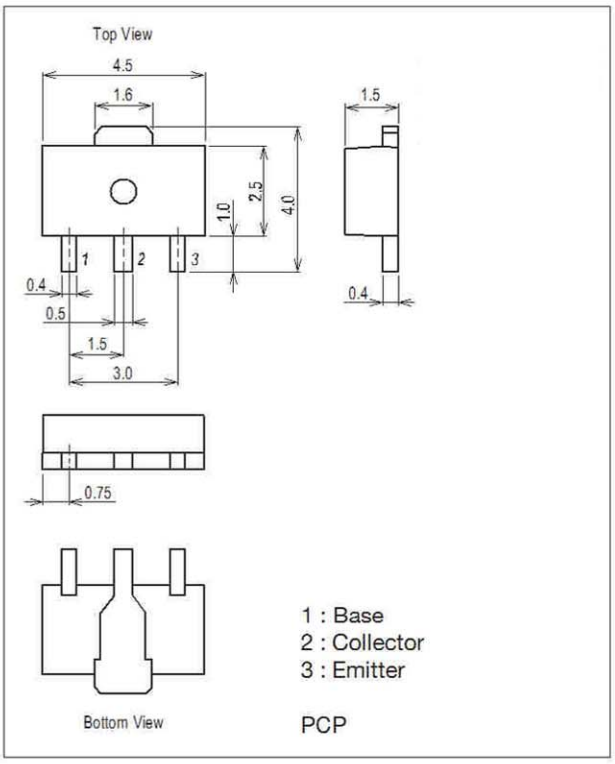
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		60	V
Collector-to-Emitter Voltage	V_{CEO}		20	V
Emitter-to-Base Voltage	V_{EBO}		6	V
Collector Current	I_C		5	A
Collector Current (Pulse)	I_{CP}		8	A

Continued on next page.

Package Dimensions

unit : mm (typ)

7007B-004



● Continued from preceding page.

Parameter	Symbol	Conditions	Ratings	Unit
Collector Dissipation	P_C		500	mW
		When mounted on ceramic substrate (250mm²×0.8mm)	1.5	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

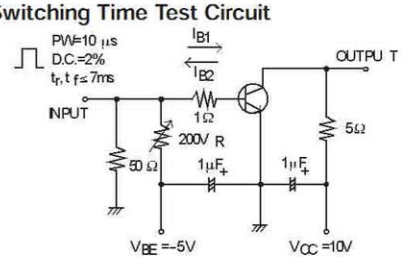
● **Electrical Characteristics** at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=50V, I_E=0A			100	nA
Emitter Cutoff Current	I_{EBO}	V_{EB}=5V, I_C=0A			100	nA
DC Current Gain	$h_{FE}1$	V_{CE}=2V, I_C=0.5A	120*		560*	
	$h_{FE}2$	V_{CE}=2V, I_C=3A	95			
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=50mA		120		MHz
Output Capacitance	Cob	V_{CB}=10V, f=1MHz		45		pF
Collector-to-Emitter Saturation Voltage	V_{CE}(sat)	I_C=3A, I_B=60mA			500	mV
Base-to-Emitter Saturation Voltage	V_{BE}(sat)	I_C=3A, I_B=60mA			1.5	V
Turn-ON Time	t_{on}	See specified Test Circuit.		30		ns
Storage Time	t_{stg}			300		ns
Fall Time	t_f			40		ns

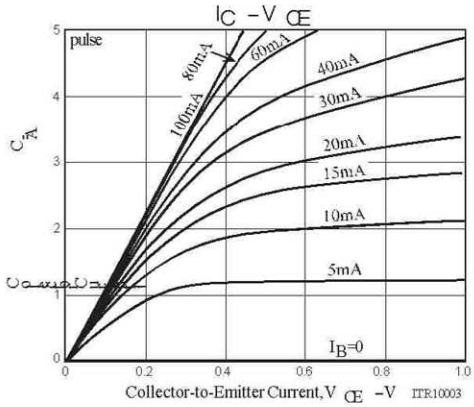
● * : The 2SD1628 is classified by 0.5A h_{FE} as follows :

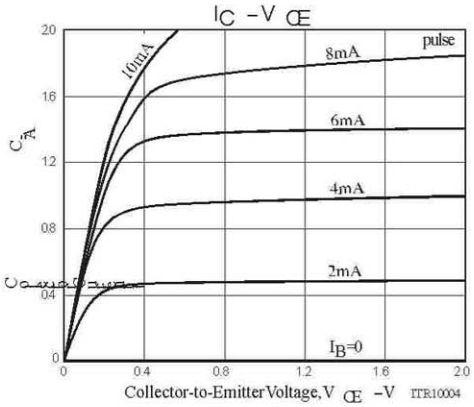
Rank	E	F	G
h_{FE}	120 to 200	160 to 320	280 to 560

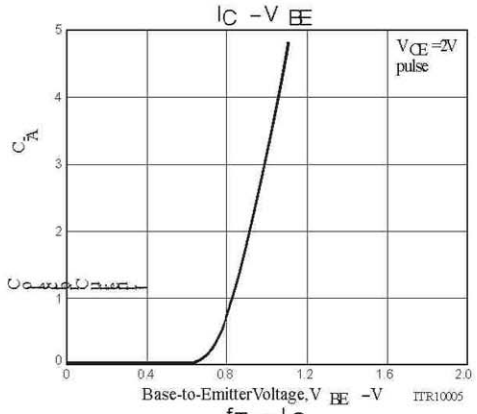
Switching Time Test Circuit

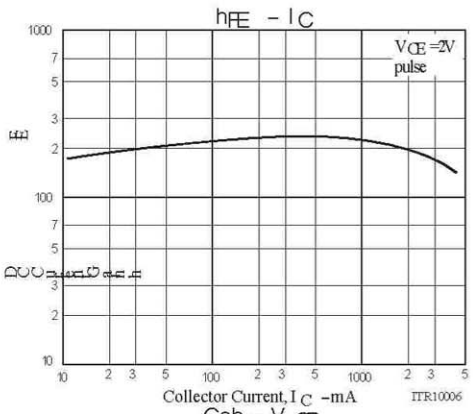


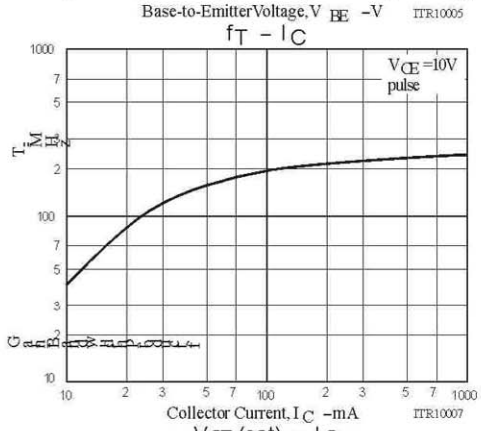
I_C=10I_{B1}=−10I_{B2}=2A

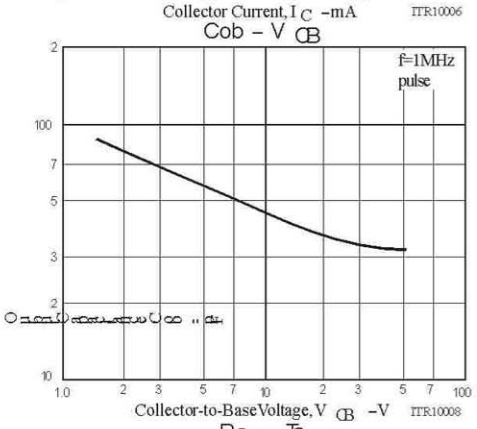


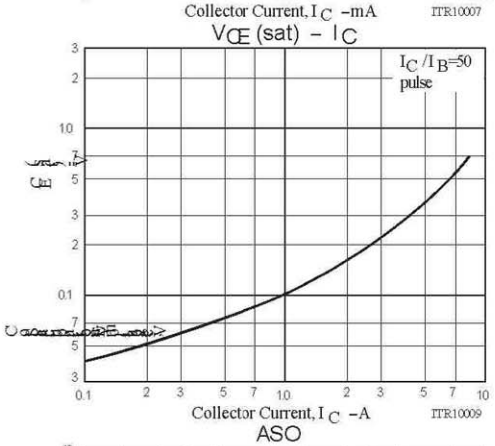


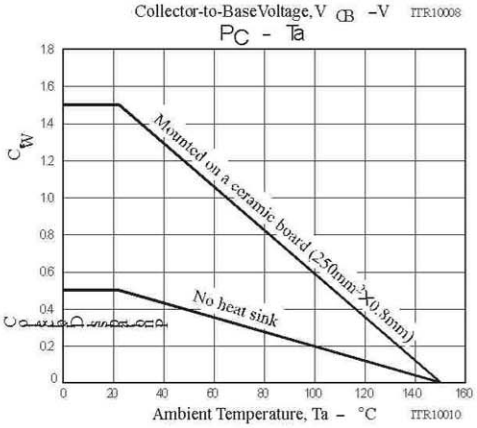

IC – VBE
VCE=2V
pulse
Base-to-Emitter Voltage, VBE –V
ITR10005

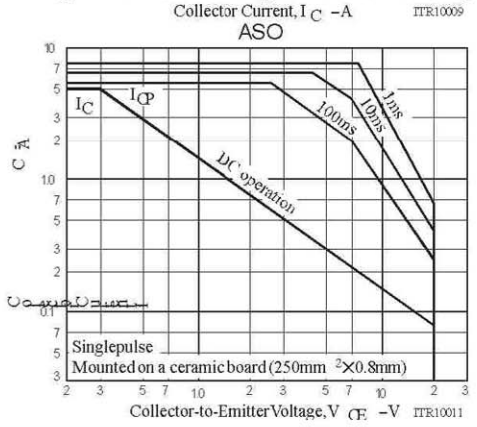

hFE – IC
VCE=2V
pulse
Collector Current, IC –mA
ITR10006


fT – IC
VCE=10V
pulse
Collector Current, IC –mA
ITR10007


Cob – VCB
f=1MHz
pulse
Collector-to-Base Voltage, VCB –V
ITR10008


VCE(sat) – IC
IC/IB=50
pulse
Collector Current, IC –A
ITR10009


PC – Ta
Mounted on a ceramic board (250mm2×0.8mm)
No heat sink
Ambient Temperature, Ta – °C
ITR10010


ASO
IC
ICP
1ms
10ms
100ms
DC operation
Singlepulse
Mounted on a ceramic board (250mm 2×0.8mm)
Collector-to-Emitter Voltage, VCE –V
ITR10011