Ordering number:ENN837E

NPN Triple Diffused Planar Silicon Transistor

2SD1159

TV Horizontal Deflection Output, High-Current Switching Applications

Features

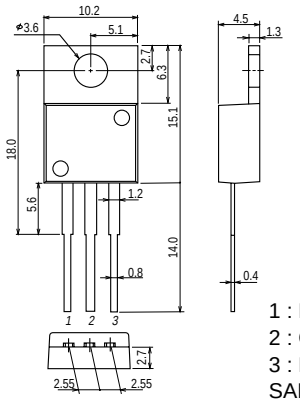
· Capable of efficient drive with small internal loss due to excellent t_f.

Package Dimensions

unit:mm

2010C

[2SD1159]



1 : Base
2 : Collector
3 : Emitter
SANYO : TO-220AB

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		200	V
Collector-to-Emitter Voltage	V_{CEO}		60	V
Emitter-to-Base Voltage	V_{EBO}		6	V
Collector Current	I_C		4.5	A
Collector Current (Pulse)	I_{CP}		10	A
Collector Dissipation	P_C	Tc=25˚C	40	W
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–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}=40V, I_E=0			0.1	mA
Emitter Cutoff Current	I_{EBO}	V_{EB}=5V, I_C=0			0.1	mA
DC Current Gain	$h_{FE}1$	V_{CE}=5V, I_C=1A	30		160	
	$h_{FE}2$	V_{CE}=5V, I_C=4A	25			
Gain-Bandwidth Product	f_T	V_{CE}=5V, I_C=1A		10		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=4A, I_B=0.4A		0.5	1.0	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=4A, I_B=0.4A			1.5	V

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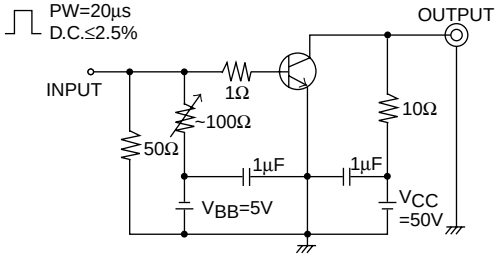
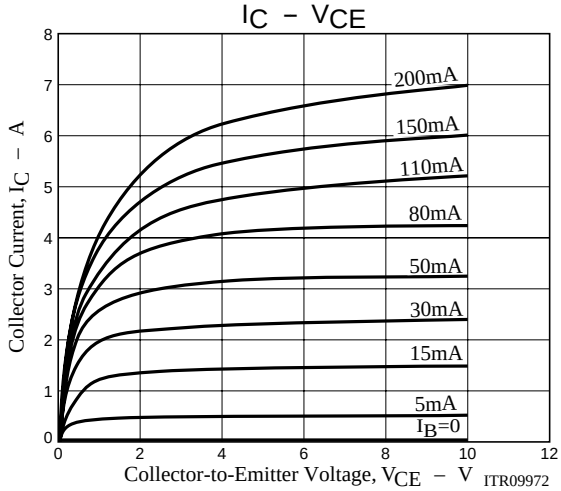
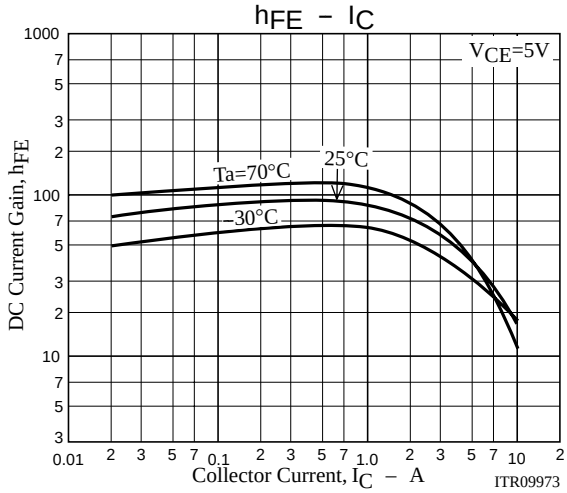
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=5mA, I_E=0	200			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=5mA, R_{BE}=∞	60			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=5mA, I_C=0	6			V
Fall Time	t_f	See specified Test Circuit.		0.2	0.5	μs

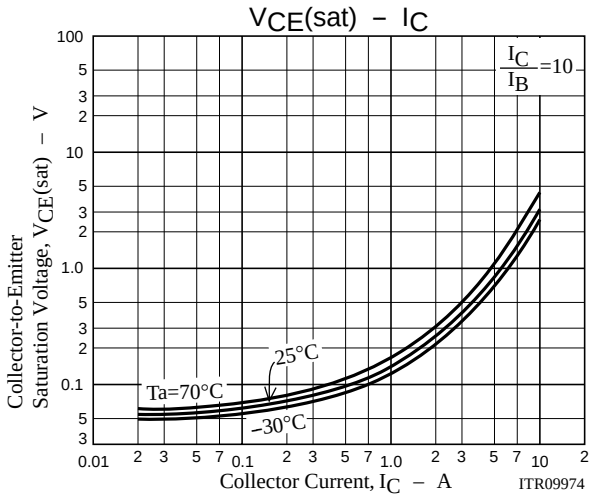
Specified Test Circuit

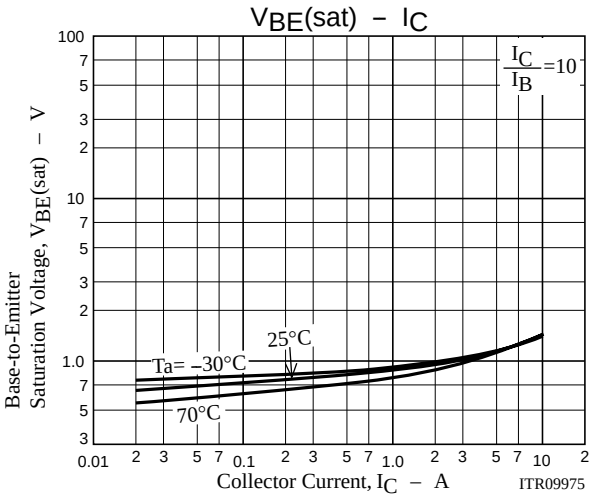


V_{CC}=50V
I_C=5A
I_{B1}=–I_{B2}=500mA









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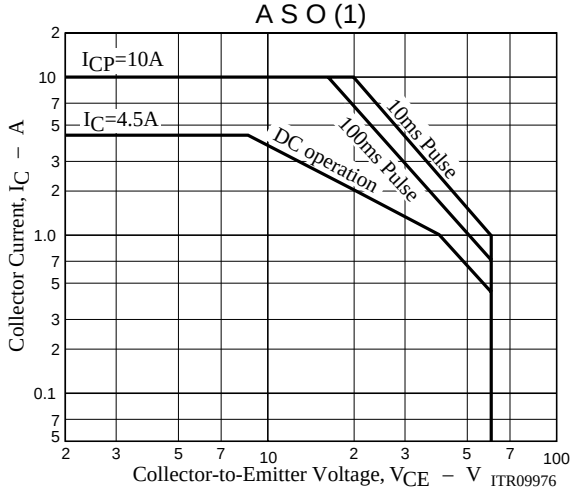

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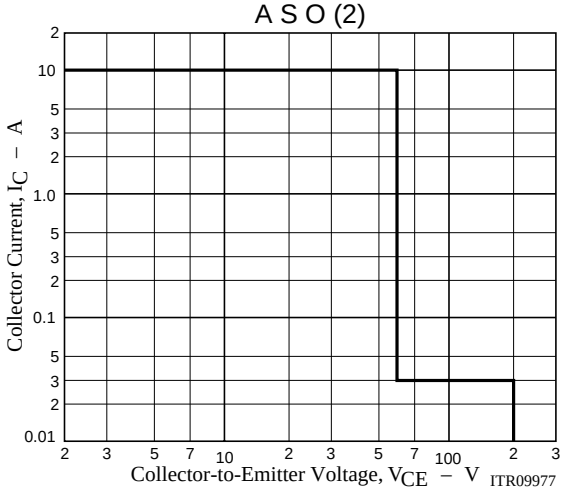

PC – Tc