Ordering number:ENN3271

NPN Triple Diffused Planar Silicon Composite Transistor

HPA72R

Ultrahigh-Definition CRT Display Horizontal Deflection Output Applications

Features

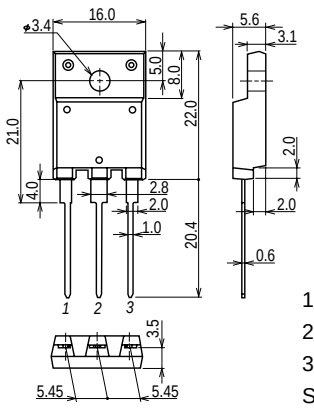
- High speed.
- High breakdown voltage.
- High-speed damper diode placed in one package.
- Adoption of MBIT process.
- High reliability.
- Micaless package facilitating easy mounting.

Package Dimensions

unit:mm

2039D

[HPA72R]



1 : Base
2 : Collector
3 : Emitter
SANYO : TO3PML

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		1500	V
Collector-to-Emitter Voltage	V_{CEO}		800	V
Emitter-to-Base Voltage	V_{EBO}		6	V
Collector Current	I_C		7	A
Collector Current (Pulse)	I_{CP}		16	A
Diode Forward Current	I_O		4	A
Diode Forward Current (Pulse)	I_{OP}	PW≤100μs, duty≤50%	7	A
Total Power Dissipation	P_T	Tc=25°C	60	W
		Ta=25°C	3	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}=1500V, I_E=0			5	mA
Collector Sustain Voltage	$V_{CEO(sus)}$	I_C=100mA, I_B=0	800			V
Emitter Cutoff Current	I_{EBO}	V_{EB}=4V, I_C=0			1.0	mA
DC Current Gain	$h_{FE}(1)$	V_{CE}=5V, I_C=1A	8			
	$h_{FE}(2)$	V_{CE}=5V, I_C=4A	4*		10*	

* : The HPA72R is classified by 4A h_{FE} as follows :

4	2	6	5	3	8	7	4	10

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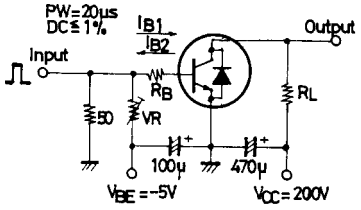
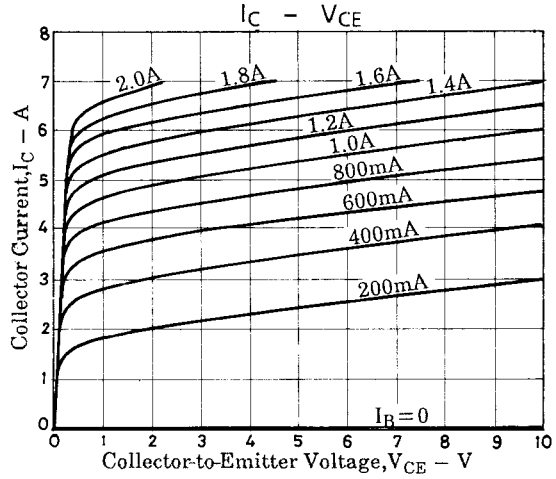
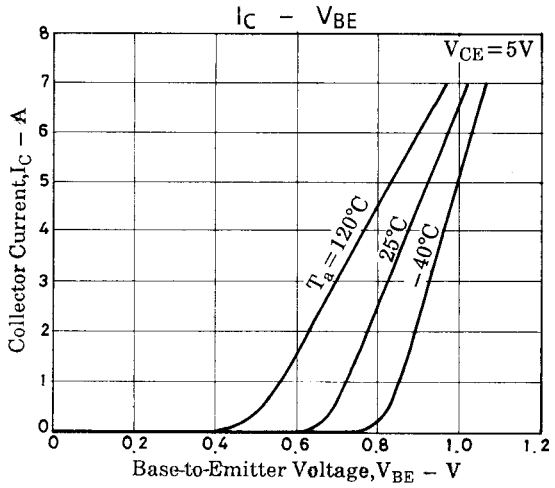
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=4A, I_B=1A			5	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=4A, I_B=1A			1.5	V
Storage Time	t_{stg}	I_C=4A, I_{B1}=0.8A, I_{B2}=–1.6A			3	μs
Fall Time	t_f	I_C=4A, I_{B1}=0.8A, I_{B2}=–1.6A		0.1	0.2	μs
Diode Forward Voltage	V_F(1)	I_F=4A			3	V
	V_F(2)	I_F=7A			5	V
Diode Reverse Recovery Time	t_{rr}	I_F=–I_R=100mA			1	μs
Diode Forward Recovery Time	t_{fr}	I_F=100mA		0.1	0.2	μs

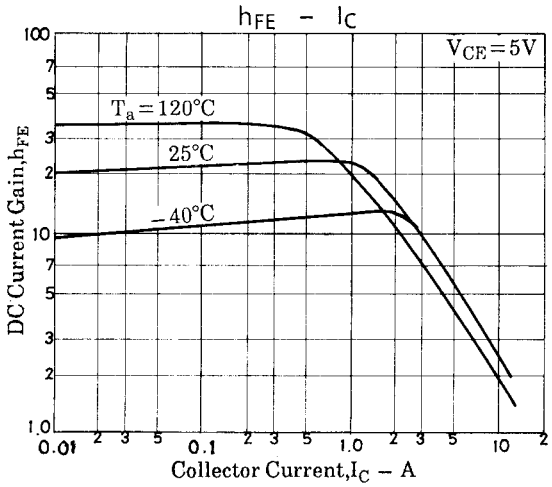
Switching Time Test Circuit

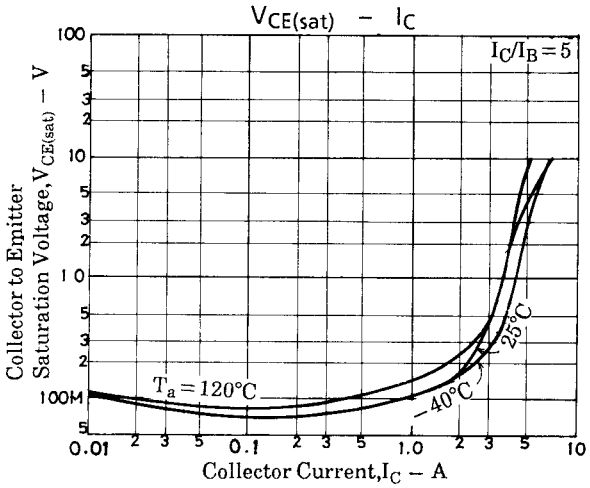


Unit (resistance:Ω, capacitance:F)

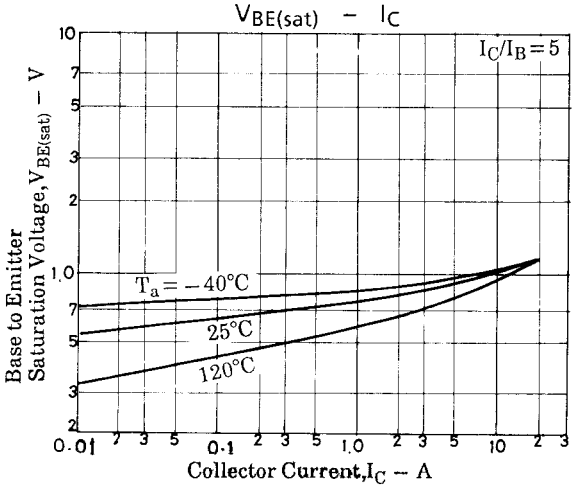




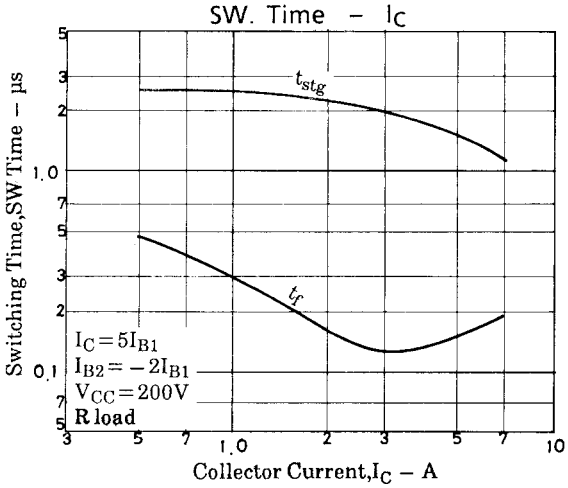




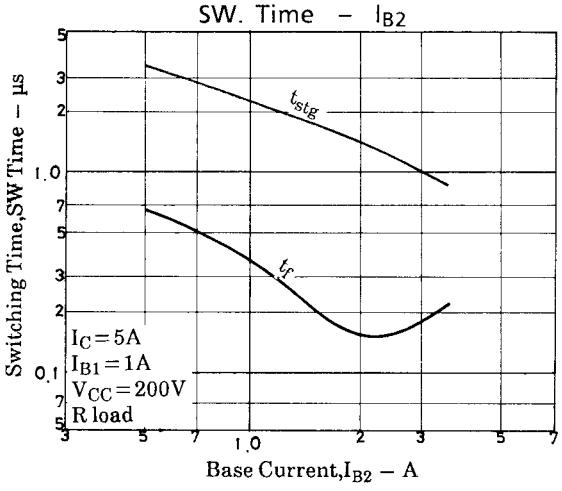
$V_{BE(sat)}$ – I_C



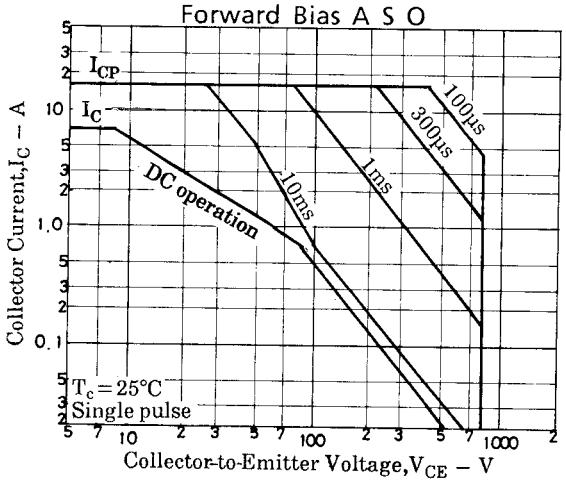
SW. Time – I_C



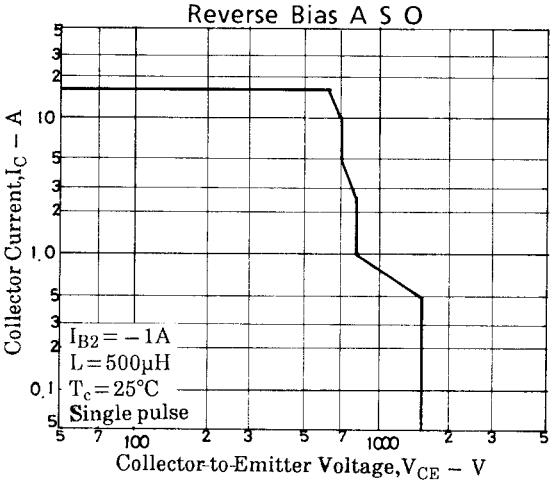
SW. Time – I_{B2}



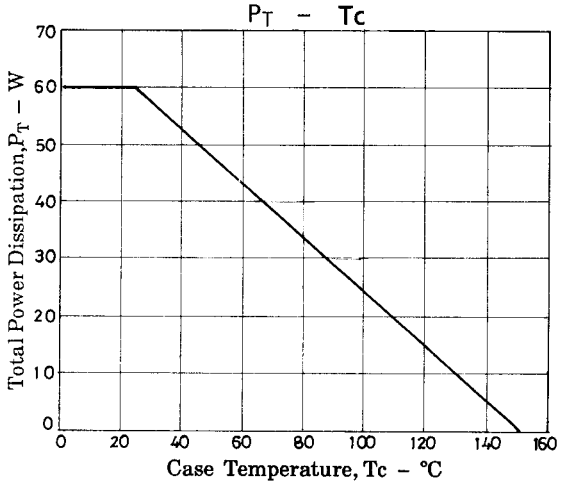
Forward Bias A S O



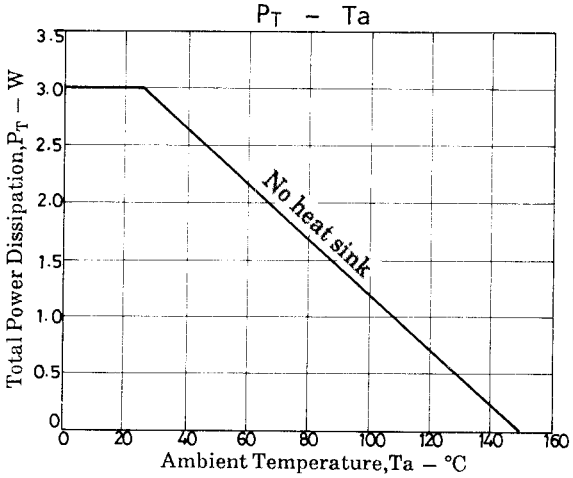
Reverse Bias A S O



P_T – Tc



P_T – Ta



I_F – V_F