Ordering number:EN2973

PNP Epitaxial Planar Silicon Transistors

2SA1699

High-Voltage Driver Applications

Features

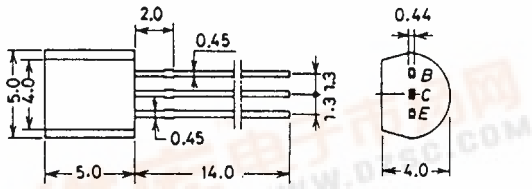
- High breakdown voltage.
- Adoption of MBIT process.
- Excellent h_{FE} linearity.

Package Dimensions

unit:mm

2003A

[2SA1699]



JEDEC : TO-92
EIAJ : SC-43
SANYO : NP

B : Base
C : Collector
E : Emitter

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		–400	V
Collector-to-Emitter Voltage	V_{CEO}		–400	V
Emitter-to-Base Voltage	V_{EBO}		–5	V
Collector Current	I_C		–200	mA
Colletor Current (Pulse)	I_{CP}		–400	mA
Collector Dissipation	P_C		600	mW
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}=–300V, I_E=0			–0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=–4V, I_C=0			–0.1	μA
DC Current Gain	h_{FE}	V_{CE}=–10V, I_C=–50mA	60*		200*	
Gain-Bandwidth Product	f_T	V_{CE}=–30V, I_C=–10mA		70		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=–50mA, I_B=–5mA			–0.8	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=–50mA, I_B=–5mA			–1.0	V

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SANYO Electric Co.,Ltd. Semiconductor Bussiness Headquaters
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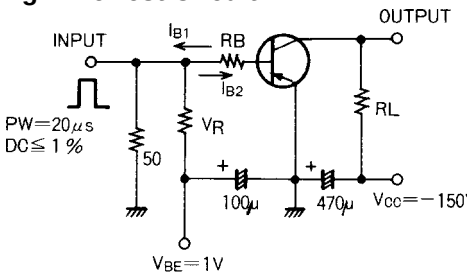
Continued from preceding page.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=–10μA, I_E=0	–400			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=–1mA, R_{BE}=∞	–400			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=–10μA, I_C=0	–5			V
Collector Output Capacitance	C_{ob}	V_{CB}=–30V, f=1MHz		5		pF
Reverse Trarnsfer Capacitance	C_{re}	V_{CB}=–30V, f=1MHz		4		pF
Turn-ON Time	t_{on}	See specified Test Circuit		0.25		μs
Turn-OFF Time	t_{off}	See specified Test Circuit		5		μs

* : The 2SA1699 is classified by 50mA h_{FE} as follows :

60	D	120	100	E	200

Switching Time Test Circuit



−10IB1= 10IB2=IC= −50mA
R_L = 3kΩ, R_B = 200Ω at I_C = −50mA
Unit (resistance : Ω, capacitance : F)