Ordering number:EN2001A

PNP/NPN Epitaxial Planar Silicon Transistors

2SA1471/2SC3748

60V/10A High-Speed Switching Applications

Applications

- Car-use inductance drivers, lamp drivers.
- Inverters drivers, conveters (strobes, flashes, FLT lighting circuits).
- Power amplifiers (high-power car stereos, motor control).
- High-speed switching (switching regulators, drivers).

Features

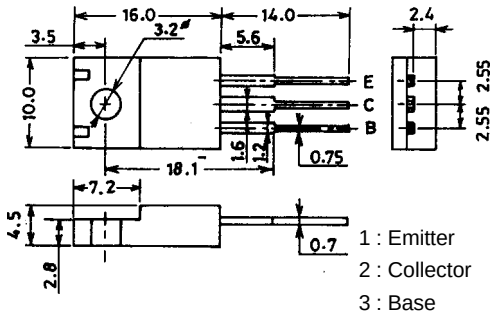
- Low saturation voltage.
- Excellent dependence of h_{FE} on current.
- Fast switching speed.
- Micaless package facilitating mountig.

Package Dimensions

unit:mm

2041

[2SA1471/2SC3748]



1 : Emitter
2 : Collector
3 : Base

JEDEC : TO-220ML

( ) : 2SA1471

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(–)80	V
Collector-to-Emitter Voltage	V_{CEO}		(–)60	V
Emitter-to-Base Voltage	V_{EBO}		(–)5	V
Collector Current	I_C		(–)10	A
Collector Current (Pulse)	I_{CP}		(–)12	A
Collector Dissipation	P_C		2	W
		Tc=25˚C	30	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}=(–)4V, I_C=0			(–)0.1	mA
DC Current Gain	h_{FE}	V_{CE}=(–)2V, I_C=(–)1A	70*		280*	
Gain-Bandwidth Product	f_T	V_{CE}=(–)5V, I_C=(–)1A		100		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=(–)5A, I_B=(–)0.25A			(–)0.4	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=(–)1mA, I_E=0	(–)80			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=(–)1mA, R_{BE}=∞	(–)60			V
Emitter-to-Base Breakdown Votage	$V_{(BR)EBO}$	I_E=(–)1mA, I_C=0	(–)5			V
Turn-ON Time	t_{on}	See specified Test Circuit		0.1		μs
Storage Time	t_{stg}	See specified Test Circuit		0.5		μs
Fall Time	t_f	See specified Test Circuit		0.1		μs

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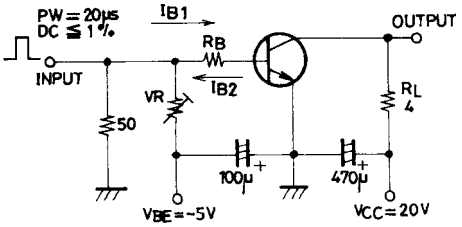
Swiching Time Test Circuit



$20I_{B1} = -20I_{B2} = I_C = 5A$

(For PNP, the polarity is reversed.)

Unit (resistance : Ω, capacitance : F)