

2SA1471/2SC3748**60V/10A High-Speed Switching Applications****Applications**

- Car-use inductance drivers, lamp drivers.
- Inverters drivers, conveters (strobos, 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.

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Specifications**Absolute Maximum Ratings at Ta = 25°C**

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		(-80)	V
Collector-to-Emitter Voltage	V_{CE0}		(-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
		$T_c=25^\circ\text{C}$	30	W
Junction Temperature	T_j		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

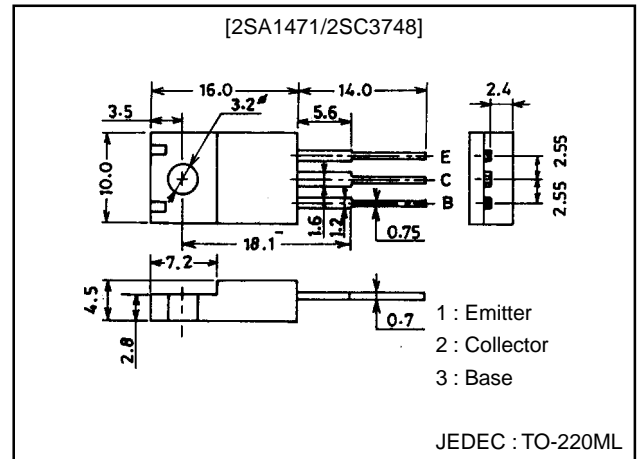
Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=-40\text{V}, I_E=0$			(-0.1)	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-4\text{V}, I_C=0$			(-0.1)	mA
DC Current Gain	h_{FE}	$V_{CE}=-2\text{V}, I_C=-1\text{A}$	70*		280*	
Gain-Bandwidth Product	f_T	$V_{CE}=-5\text{V}, I_C=-1\text{A}$		100		MHz
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-5\text{A}, I_B=-0.25\text{A}$			(-0.4)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-1\text{mA}, I_E=0$	(-80)			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}, R_{BE}=\infty$	(-60)			V
Emitter-to-Base Breakdown Votage	$V_{(BR)EBO}$	$I_E=-1\text{mA}, I_C=0$	(-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

Package Dimensions

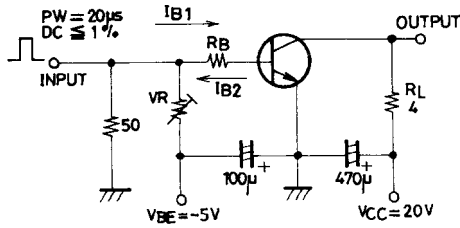
unit:mm

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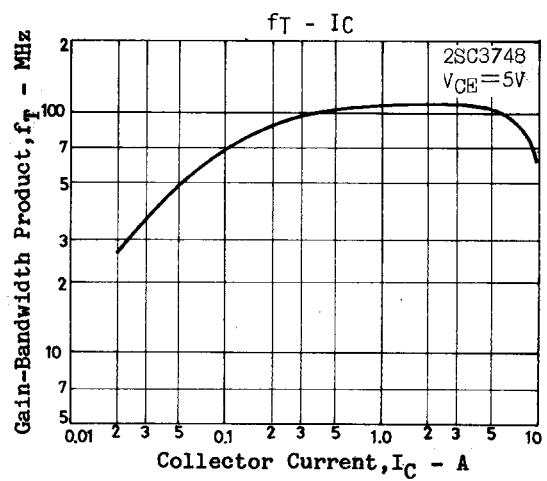
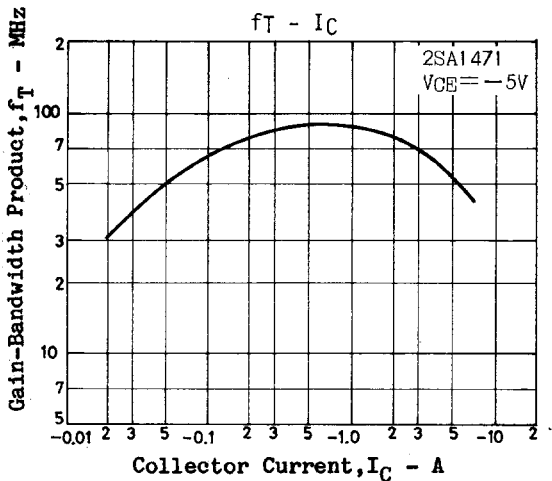
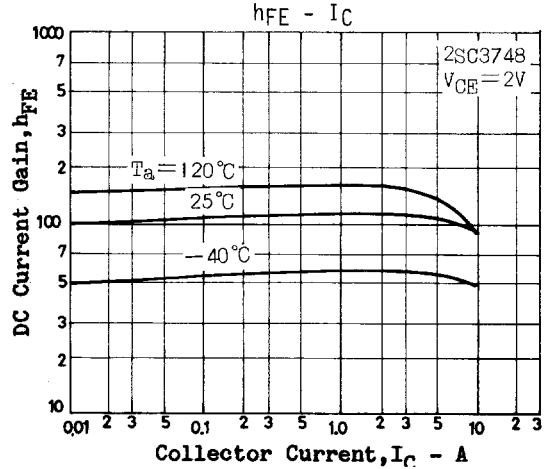
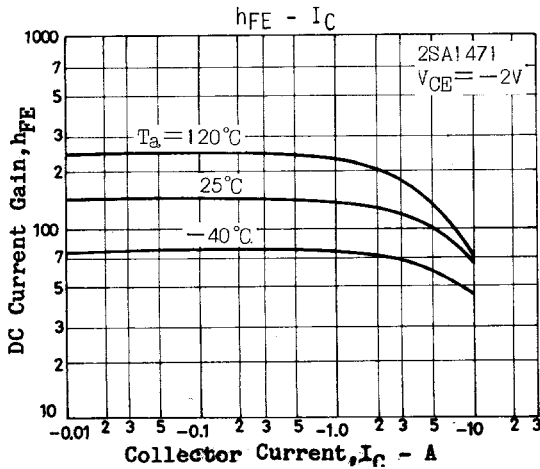
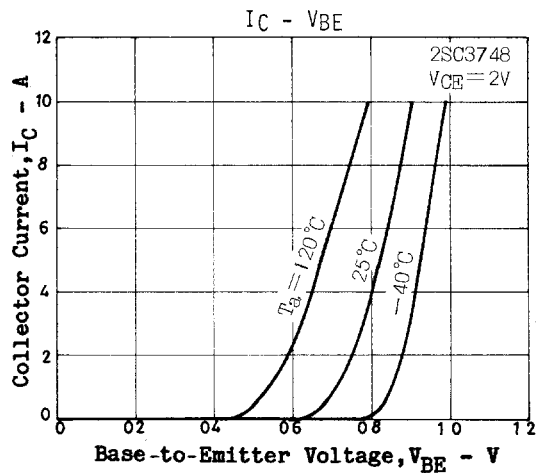
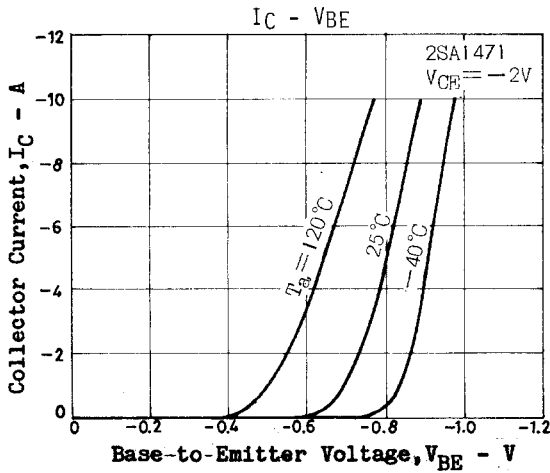
Switching Time Test Circuit



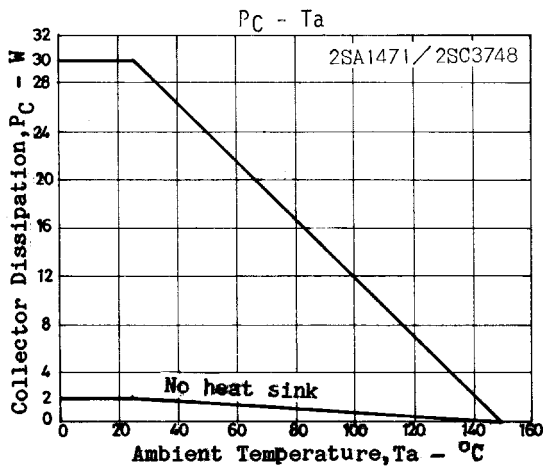
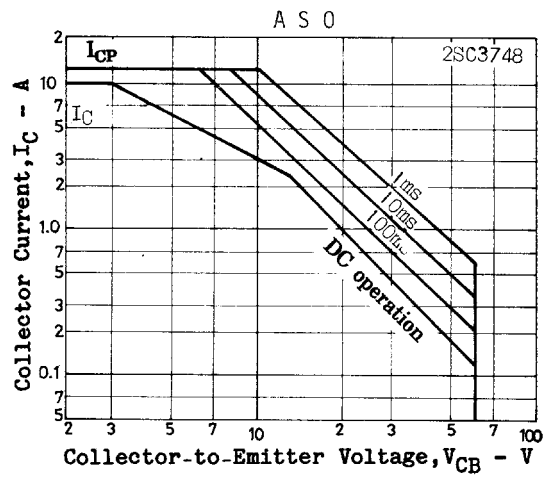
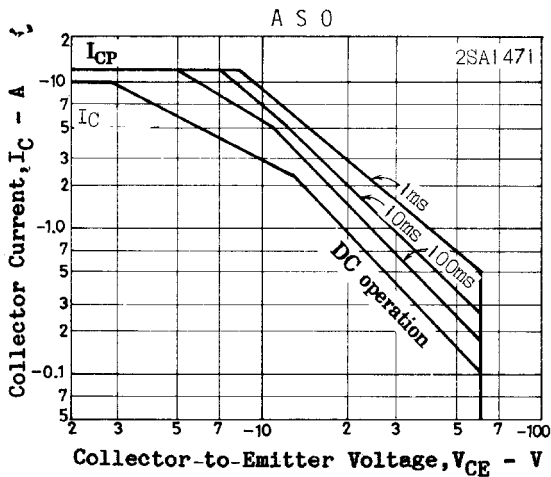
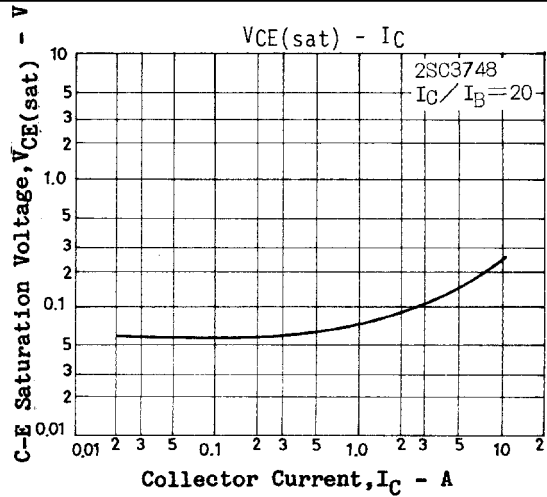
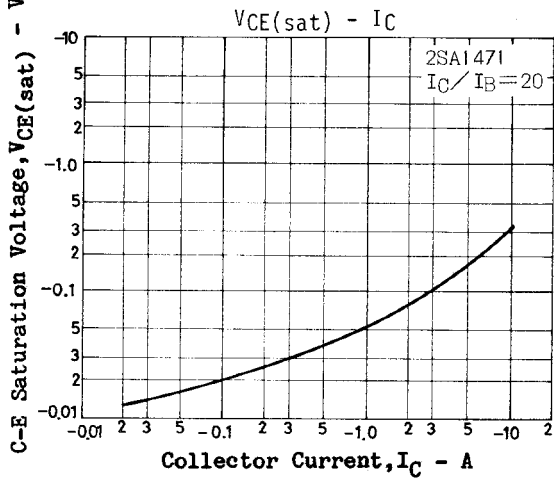
$$20I_{B1} = -20I_{B2} = I_C = 5A$$

(For PNP, the polarity is reversed.)

Unit (resistance : Ω, capacitance : F)



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