

**2SA1471/2SC3748****SANYO****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  $T_a = 25^\circ\text{C}$** 

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	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

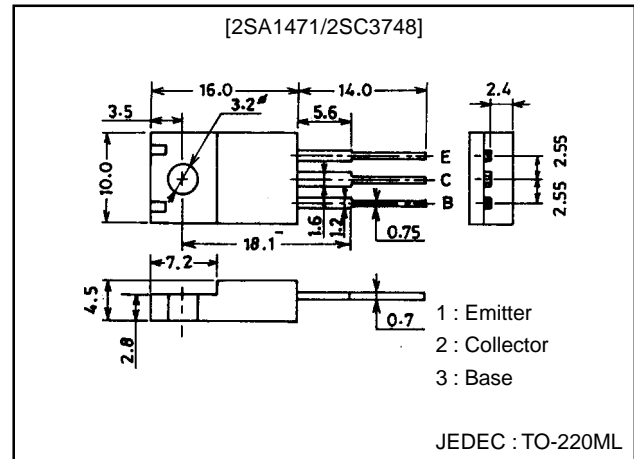
**Electrical Characteristics at  $T_a = 25^\circ\text{C}$** 

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 Voltage	$V_{(BR)EBO}$	$I_E = (-)1\text{mA}, I_C = 0$	(-)5			V
Turn-ON Time	$t_{on}$	See specified Test Circuit		0.1		$\mu\text{s}$
Storage Time	$t_{stg}$	See specified Test Circuit		0.5		$\mu\text{s}$
Fall Time	$t_f$	See specified Test Circuit		0.1		$\mu\text{s}$

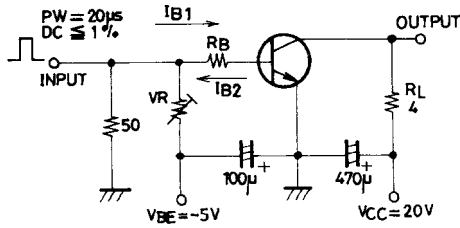
**Package Dimensions**

unit:mm

2041



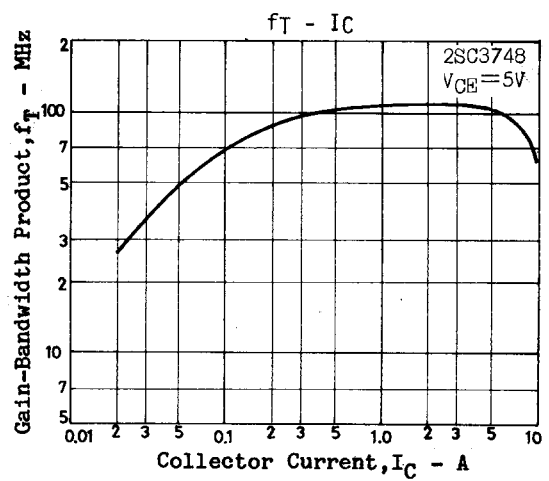
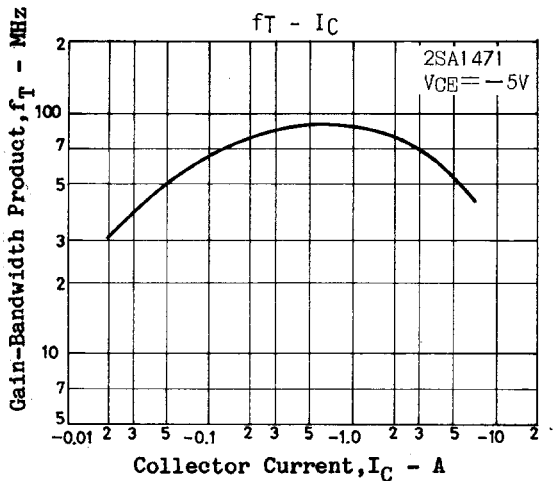
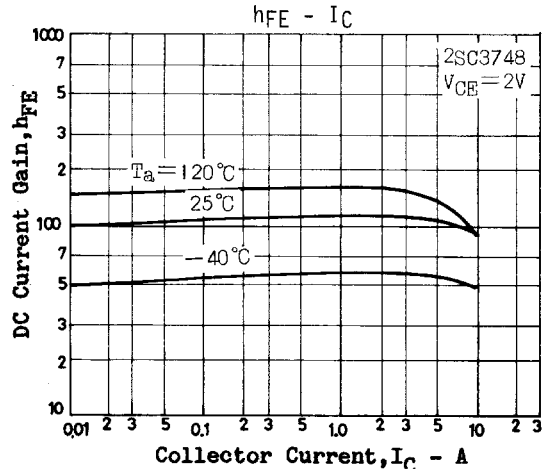
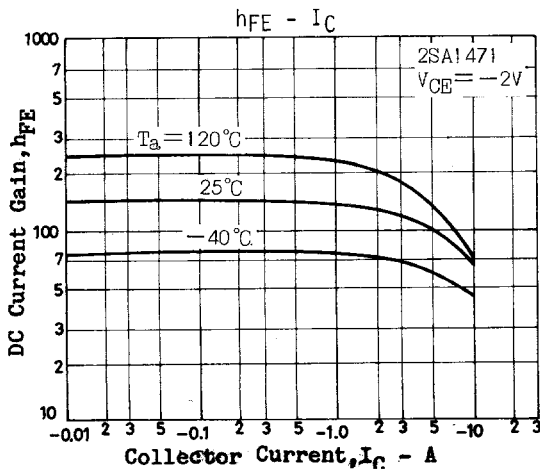
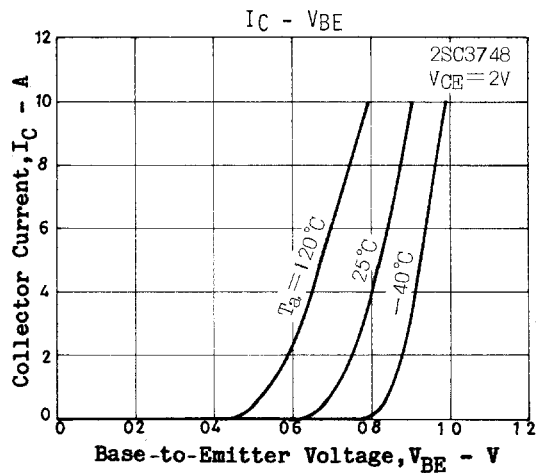
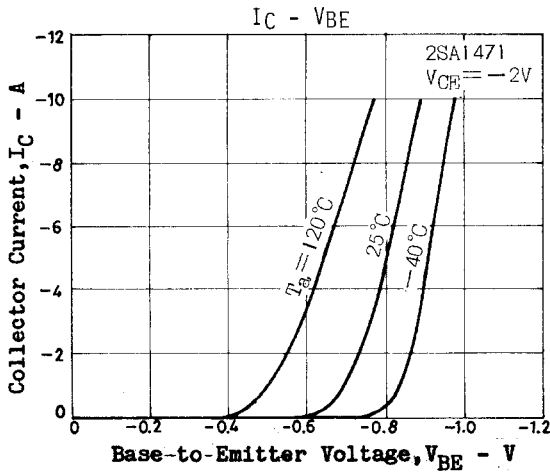
Switching Time Test Circuit



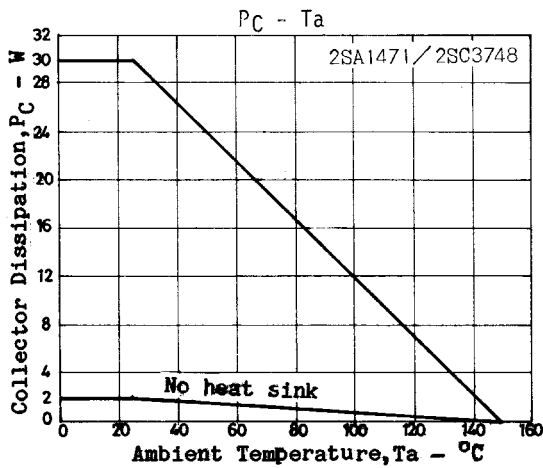
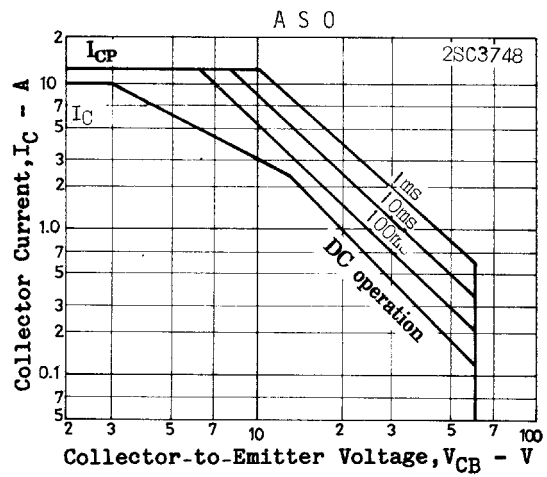
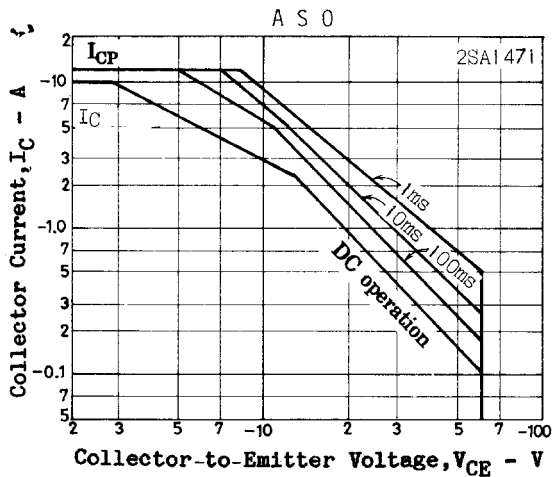
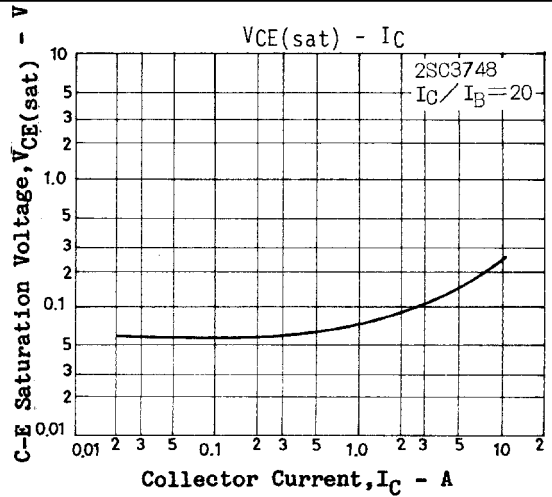
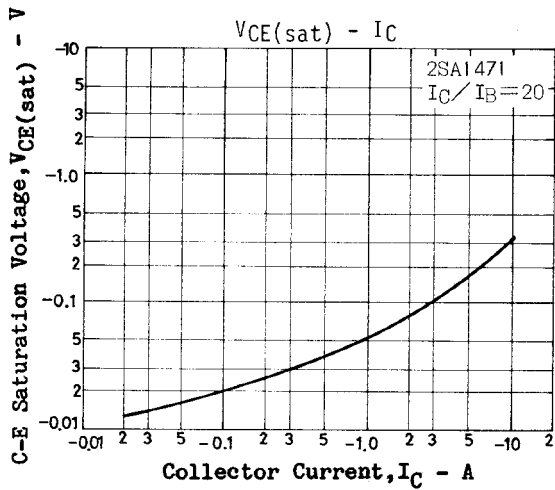
$20I_{B1} = -20I_{B2} = I_C = 5A$

(For PNP, the polarity is reversed.)

Unit (resistance : Ω, capacitance : F)



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