



SANYO Semiconductors

DATA SHEET

2SA1478 / 2SC3788 — PNP / NPN Epitaxial Planar Silicon Transistors

High-Definition CRT Display Video Output Applications

Features

- High breakdown voltage : $V_{CEO} \geq 200V$.
- Small reverse transfer capacitance and excellent high frequency characteristic : $C_{re} = 1.2pF$ (NPN), $1.7pF$ (PNP).
- Adoption of FBET process.

Specifications () : 2SA1478

Absolute Maximum Ratings at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		(-)200	V
Collector-to-Emitter Voltage	V_{CEO}		(-)200	V
Emitter-to-Base Voltage	V_{EBO}		(-)5	V
Collector Current	I_C		(-)100	mA
Collector Current (Pulse)	I_{CP}		(-)200	mA
Collector Dissipation	P_C		1.3	W
		$T_c = 25^\circ C$	5	W
Junction Temperature	T_J		150	$^\circ C$
Storage Temperature	T_{stg}		-55 to +150	$^\circ C$

Electrical Characteristics at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB} = (-)150V, I_E = 0A$			(-)0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = (-)4V, I_C = 0A$			(-)0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = (-)10V, I_C = (-)10mA$	40*		320*	

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* : The 2SA1478 / 2SC3788 are classified by 10mA h_{FE} as follows:

Rank	C	D	E	F
h_{FE}	40 to 80	60 to 120	100 to 200	160 to 320

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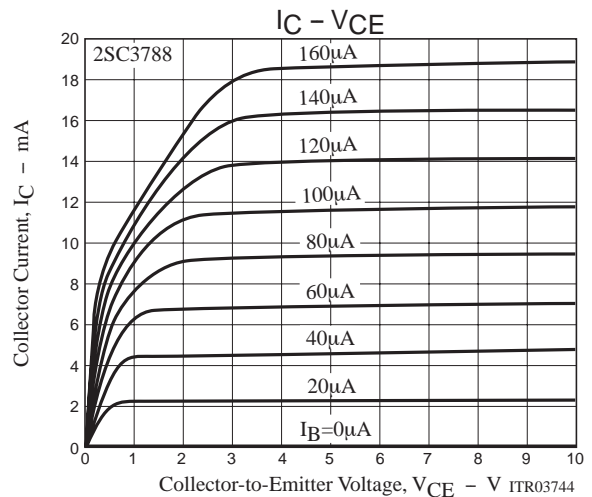
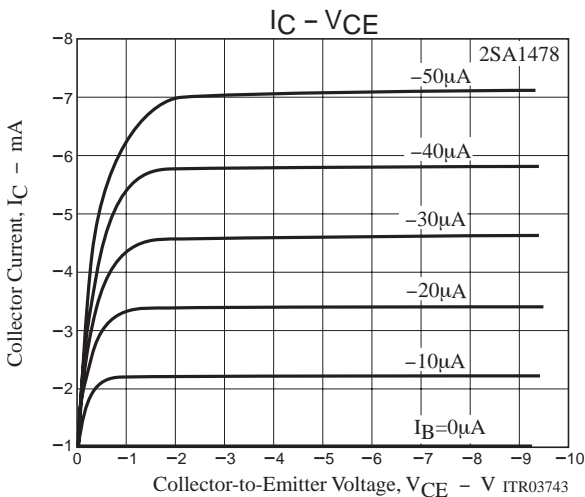
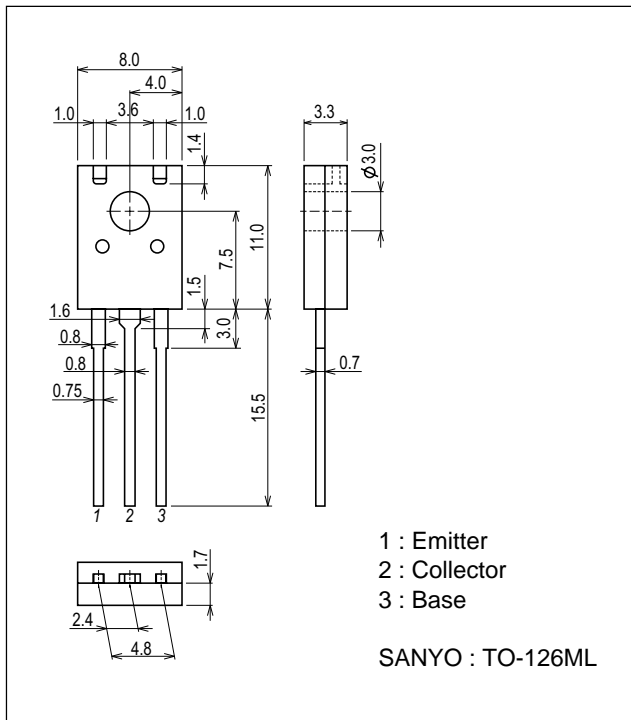
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Gain-Bandwidth Product	f_T	$V_{CE}=(-)30V, I_C=-10mA$		150		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)30V, f=1MHz$		(2.6)1.7		pF
Reverse Transfer Capacitance	C_{re}	$V_{CB}=(-)30V, f=1MHz$		(1.7)1.2		pF
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)20mA, I_B=(-)2mA$			(-)0.6	V
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)20mA, I_B=(-)2mA$			(-)1.0	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0A$	(-)200			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)200			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0A$	(-)5			V

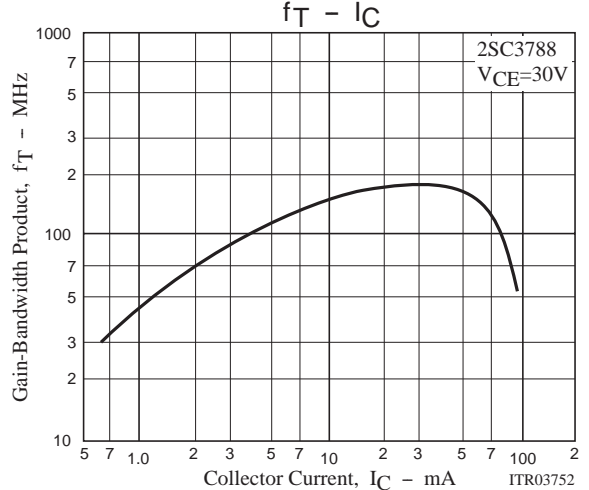
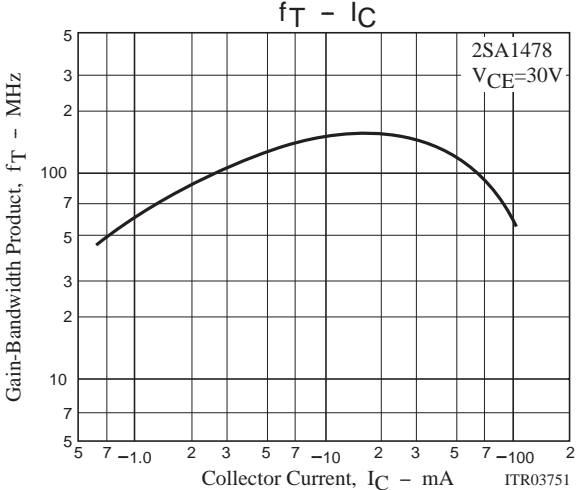
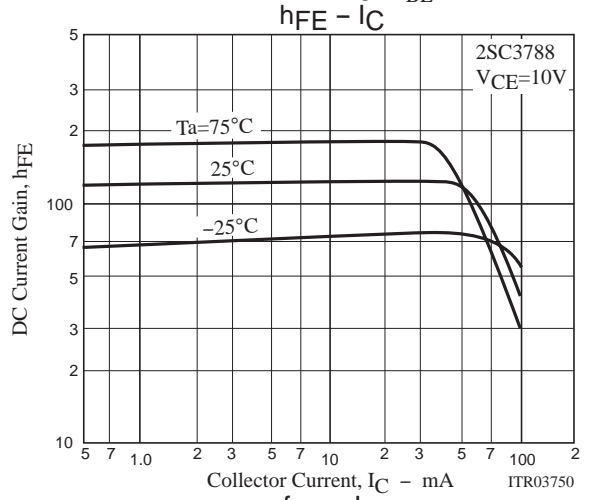
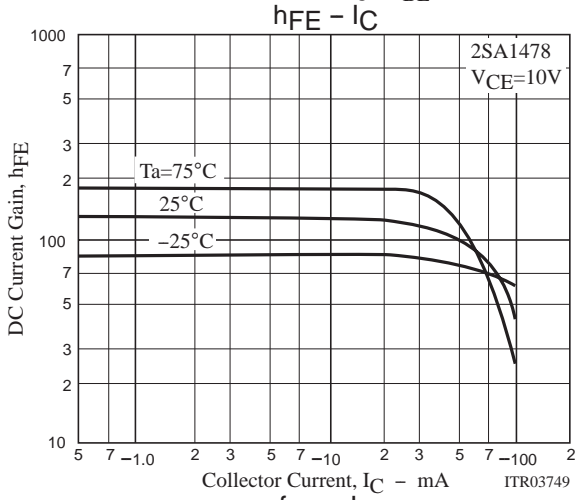
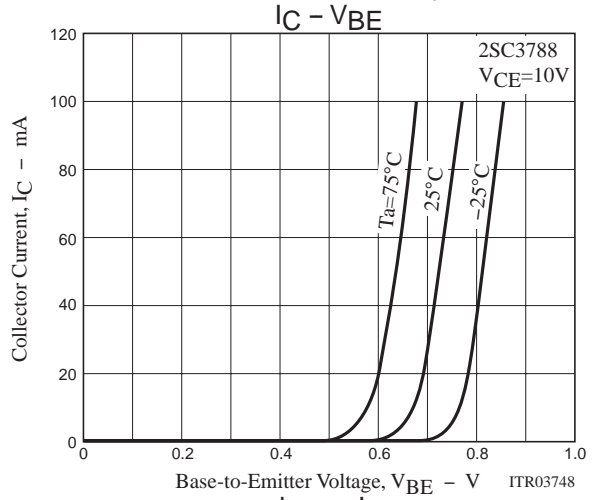
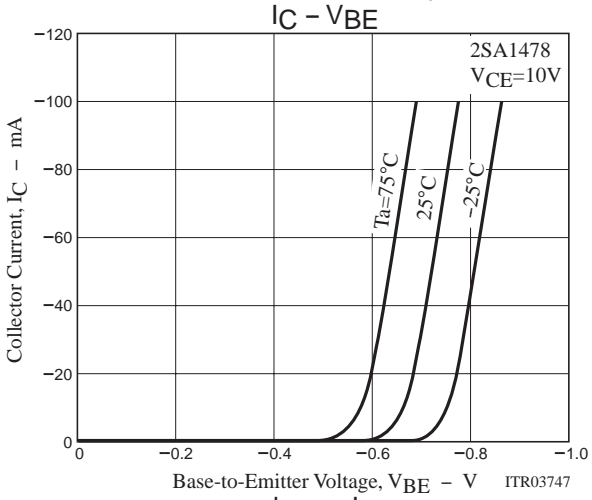
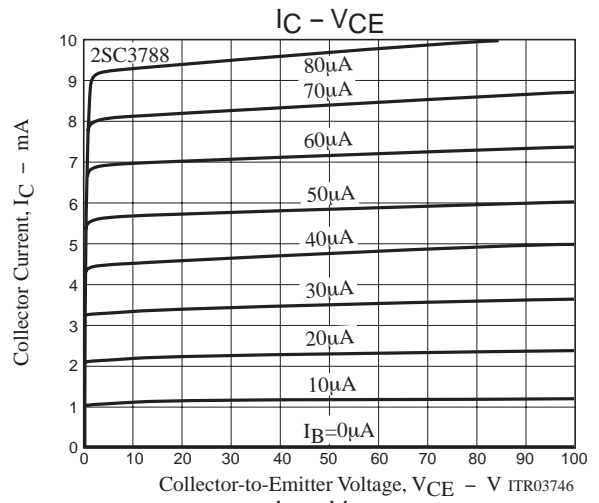
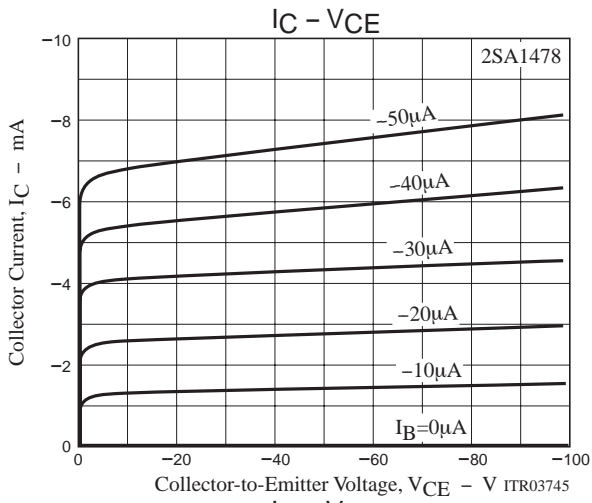
Package Dimensions

unit : mm (typ)

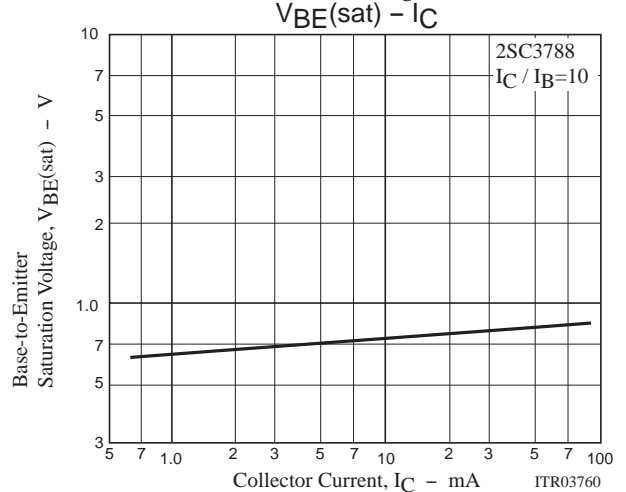
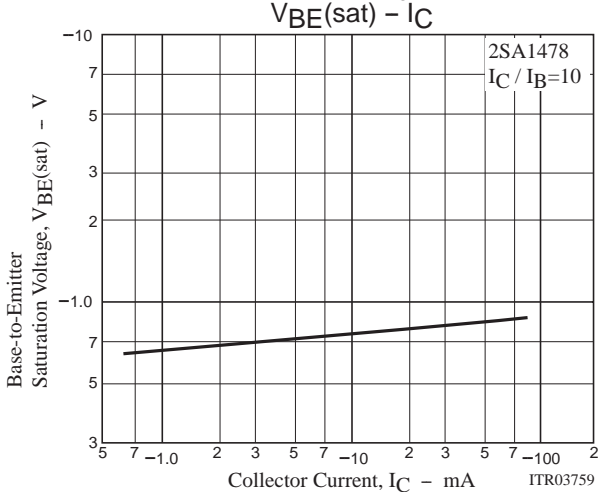
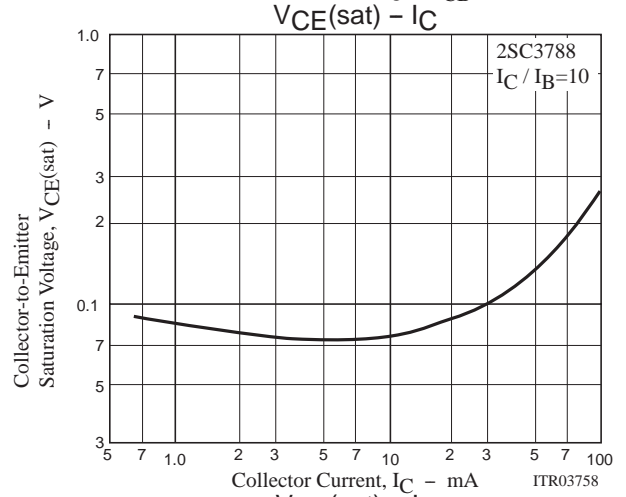
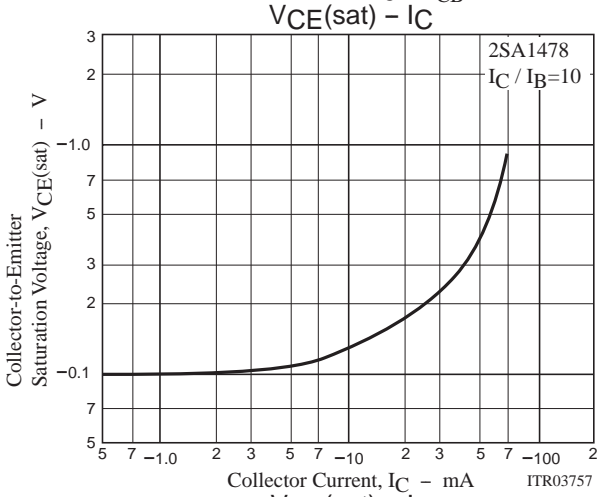
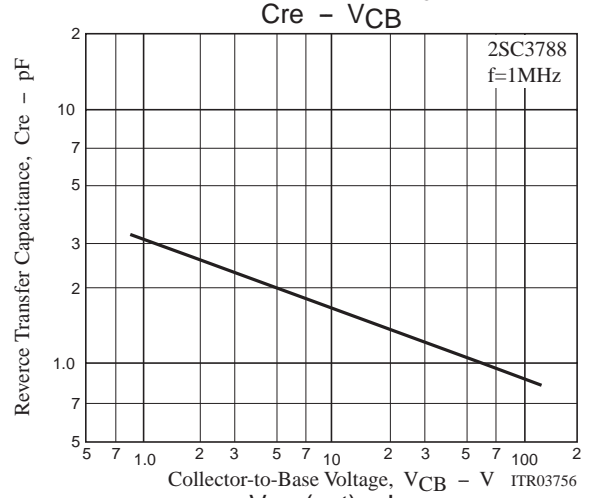
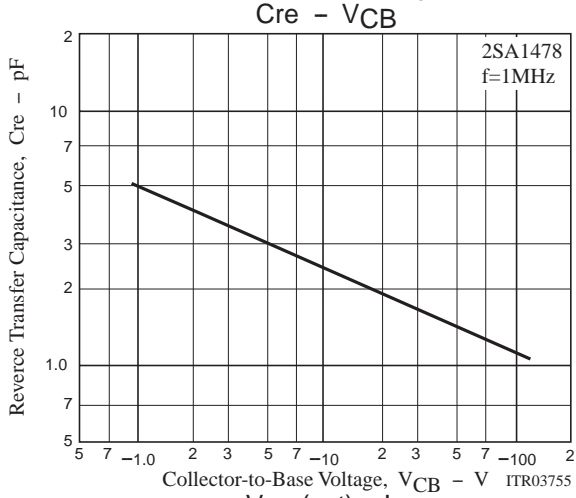
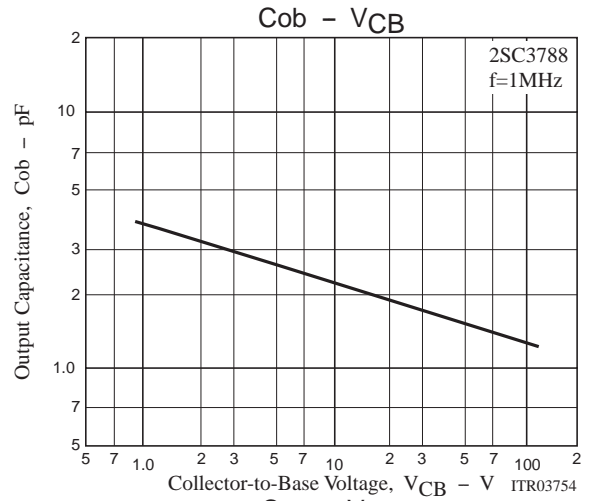
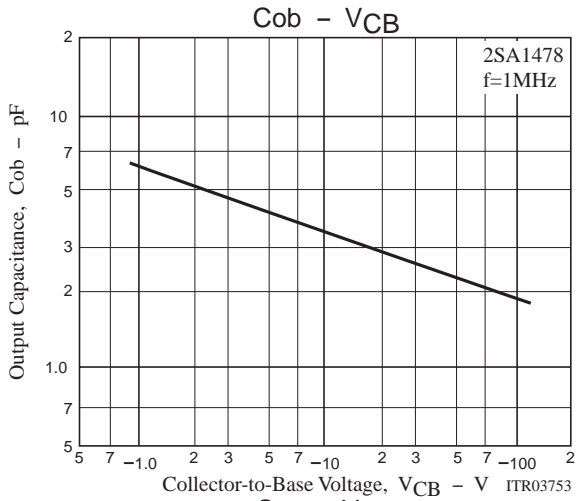
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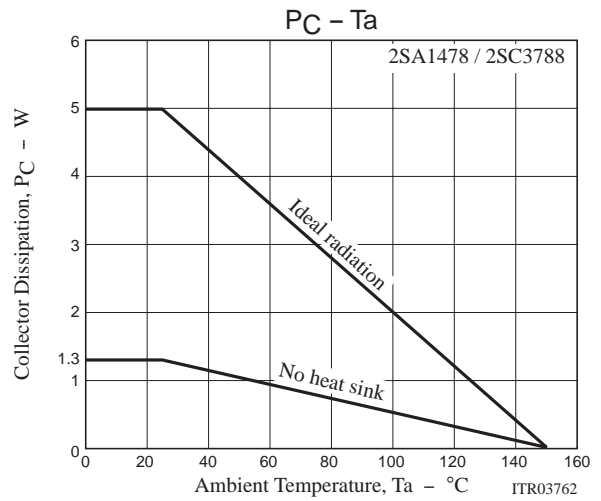
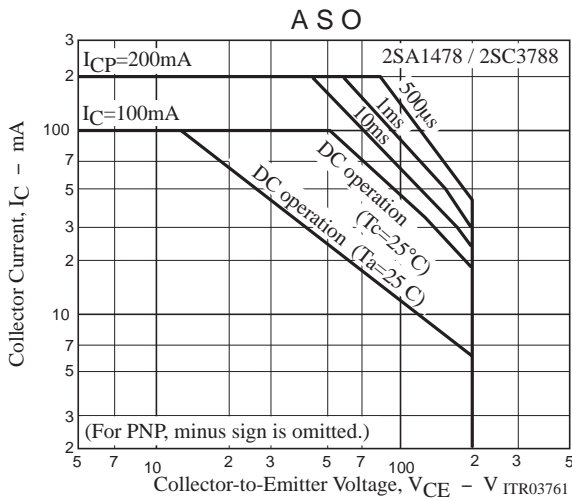
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