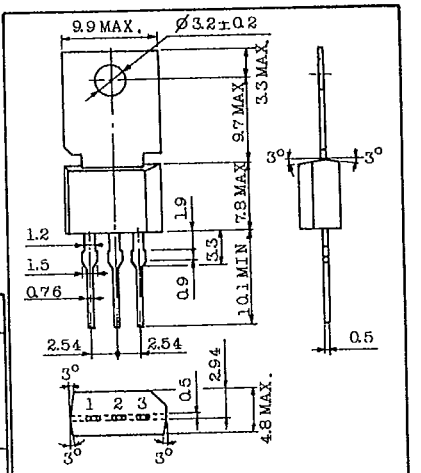
TBF869
TBF871

SILICON NPN TRIPLE DIFFUSED TYPE (PCT PROCESS)

HIGH VOLTAGE SWITCHING AND AMPLIFIER APPLICATIONS.
COLOR TV CHROMA OUTPUT APPLICATIONS.

. PNP Complements are TBF870 and TBF872.

Unit in mm



1. EMITTER
2. COLLECTOR (HEAT SINK)
3. BASE

JEDEC	TO-202
EIAJ	—
TOSHIBA	2-10F1B

Weight : 1.4g

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage	TBF869	V_{CBO}	250	V
	TBF871		300	
Collector-Emitter Voltage	TBF869	V_{CEO}	250	V
	TBF871		300	
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current	DC	I_C	50	mA
	Peak	I_{CP}	100	
Total Power Dissipation		P_{tot}	1.6	W
			5.0 (Tc=25°C)	
Base Current		I_B	20	mA
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-65~150	°C
Solder Temperature, 1.5mm from Case for 10 Seconds		-	350	°C

THERMAL CHARACTERISTICS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Thermal Resistance (Junction-Ambient)	$R_{\theta JA}$	78.3	°C/W
Thermal Resistance (Junction-Case)	$R_{\theta JC}$	25	°C/W

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ELECTRICAL CHARACTERISTICS (Ta=25°C Unless otherwise specified)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	TBF869	I_{CBO}	V_{CB}=200V, I_E=0	-	-	0.1	μA
	TBF871	I_{CER}	V_{CE}=250V, R_{BE}=2.7kΩ	-	-	0.05	
Emitter Cut-off Current		I_{EBO}	V_{EB}=5V, I_C=0	-	-	10	μA
Collector-Emitter Breakdown Voltage	TBF869	$V_{(BR)CEO}$	I_C=1mA, I_B=0	250	-	-	V
	TBF871	$V_{(BR)CER}$	I_C=1μA, R_{BE}=2.7kΩ	300	-	-	
High Temperature Collector Cut-off Current		I_{CER}	V_{CE}=200V, R_{BE}=2.7kΩ T_j=150°C	-	-	10	μA
DC Current Gain		h_{FE}	V_{CE}=20V, I_C=25mA	50	-	-	
Collector-Emitter RF Saturation Voltage		$V_{CE(sat)}$ RF	I_C=25mA, T_j=150°C	-	20	-	V
Base-Emitter Voltage		V_{BE}	V_{CE}=20V, I_C=25mA	-	0.75	-	V
Transition Frequency		f_T	V_{CE}=10V, I_C=10mA	60	100	-	MHz
Reverse Transfer Capacitance		C_{re}	V_{CB}=30V, I_E=0, f=1MHz	-	1.3	1.8	pF

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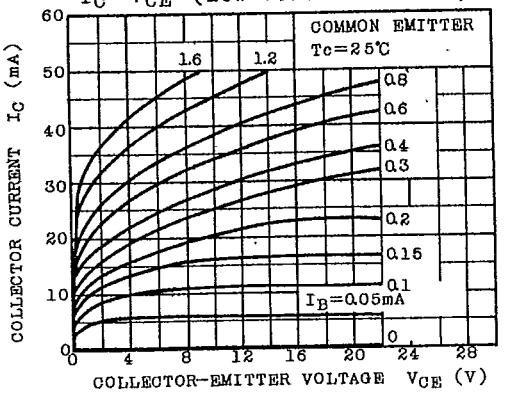
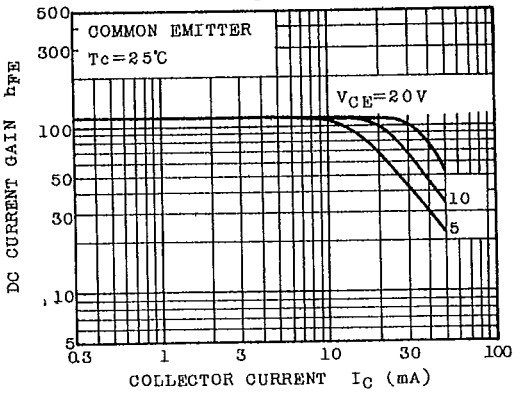
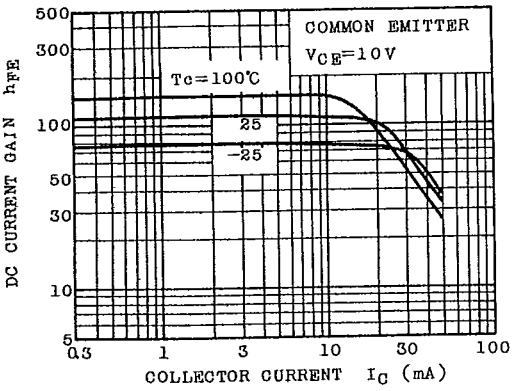
$I_C - V_{CE}$ (LOW VOLTAGE REGION)



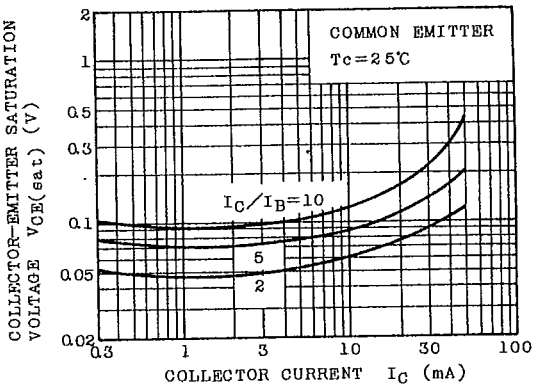
$h_{FE} - I_C$



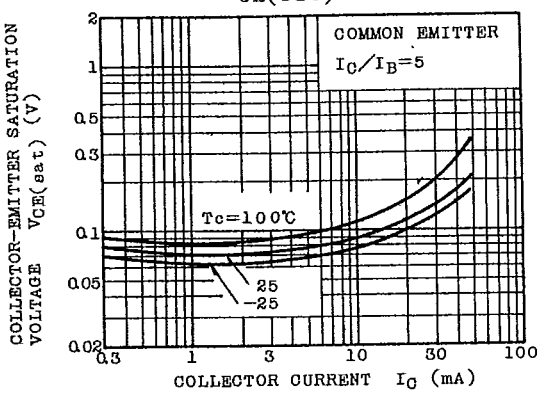
$h_{FE} - I_C$



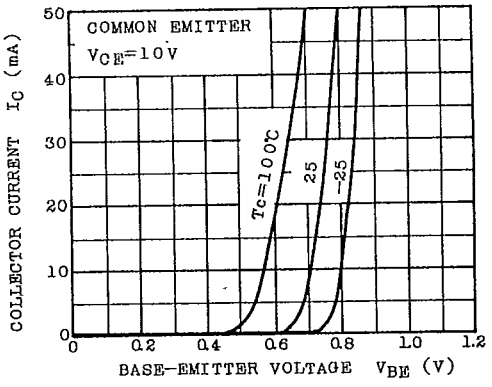
$V_{CE(sat)} - I_C$



$V_{CE(sat)} - I_C$



$I_C - V_{BE}$



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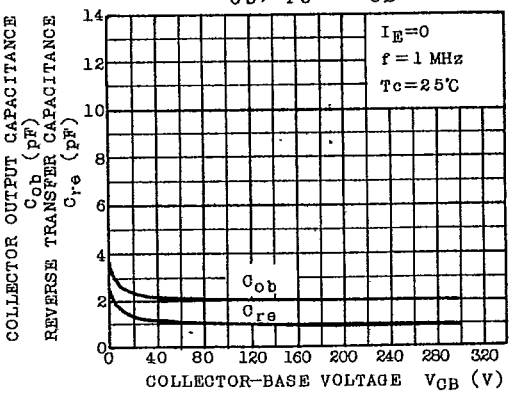
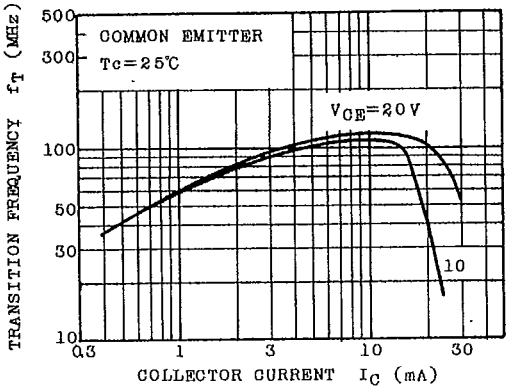
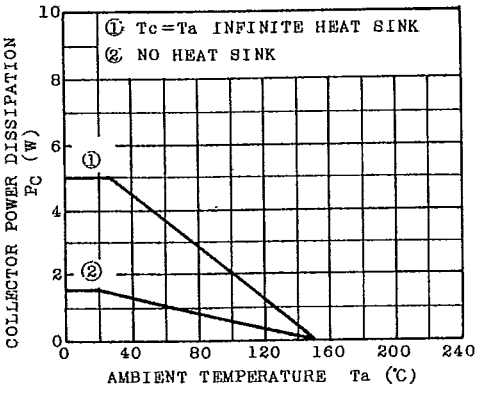
C_{ob}, C_{re} — V_{CB}



f_T — I_C



P_C — Ta



SAFE OPERATING AREA