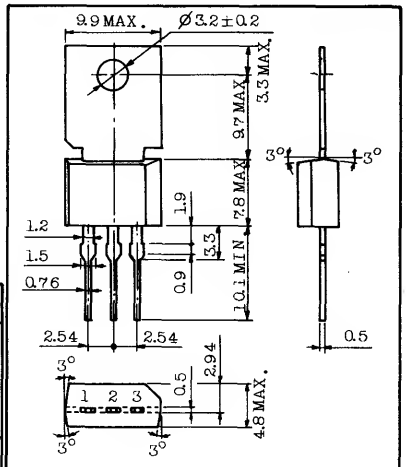
SILICON NPN TRIPLE DIFFUSED TYPE (PCT PROCESS)

TBF869
TBF871

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

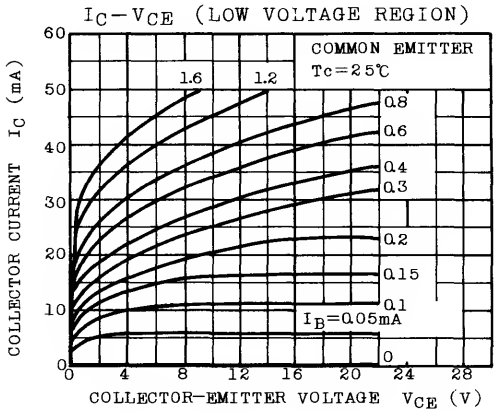
THERMAL CHARACTERISTICS

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

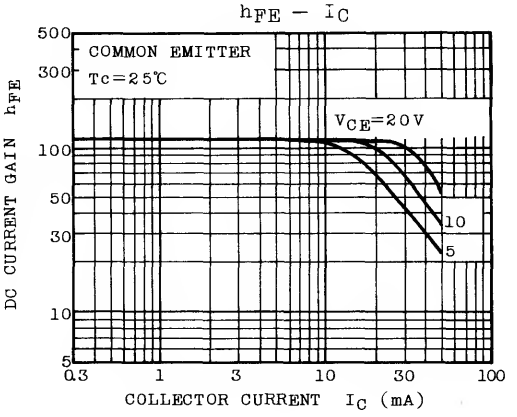
ELECTRICAL CHARACTERISTICS ($Ta=25^{\circ}C$ Unless otherwise specified)

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}	$V_{CE}=250V$, $R_{BE}=2.7k\Omega$	-	-	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	$V_{(BR)CER}$	$I_C=1\mu A$, $R_{BE}=2.7k\Omega$	300	-	-	
High Temperature Collector Cut-off Current		I_{CER}	$V_{CE}=200V$, $R_{BE}=2.7k\Omega$ $T_j=150^{\circ}C$	-	-	10	μA
DC Current Gain		h_{FE}	$V_{CE}=20V$, $I_C=25mA$	50	-	-	
Collector-Emitter RF Saturation Voltage		$V_{CE(sat)}$ RF	$I_C=25mA$, $T_j=150^{\circ}C$	-	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

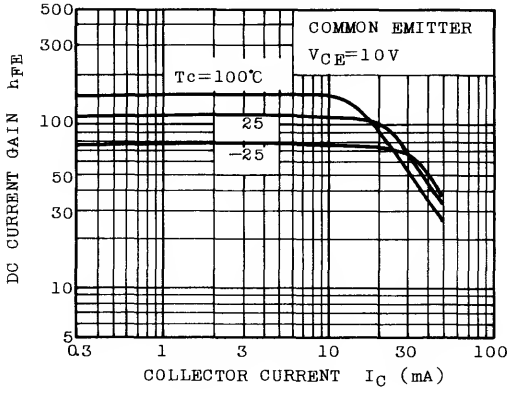
$I_C - V_{CE}$ (LOW VOLTAGE REGION)



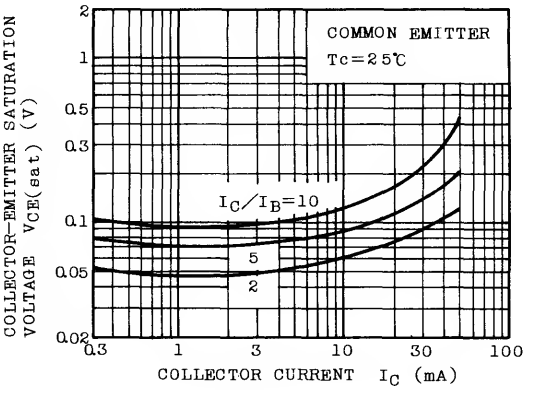
$h_{FE} - I_C$



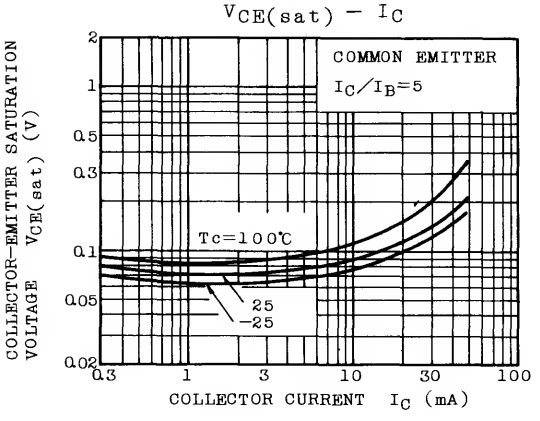
$h_{FE} - I_C$



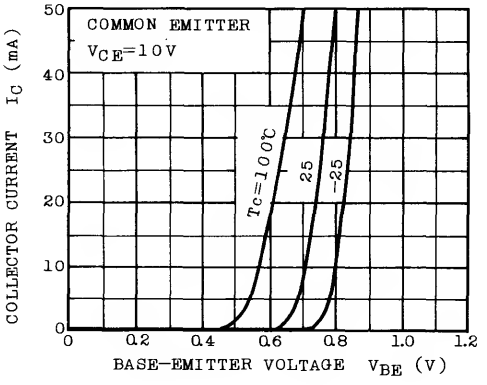
$V_{CE(sat)} - I_C$



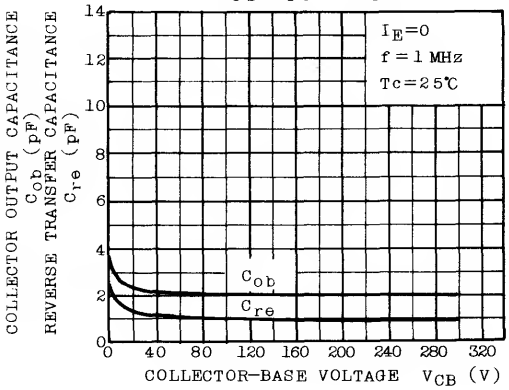
$V_{CE(sat)} - I_C$



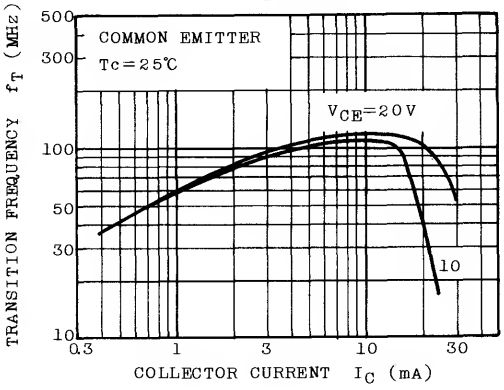
$I_C - V_{BE}$



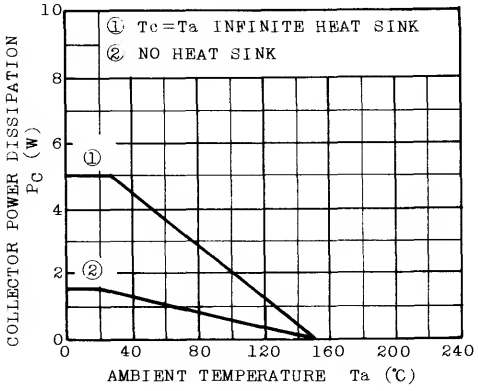
$C_{ob}, C_{re} - V_{CB}$



$f_T - I_C$



$P_C - Ta$



SAFE OPERATING AREA