

SILICON NPN TRIPLE DIFFUSED TYPE (PCT PROCESS)

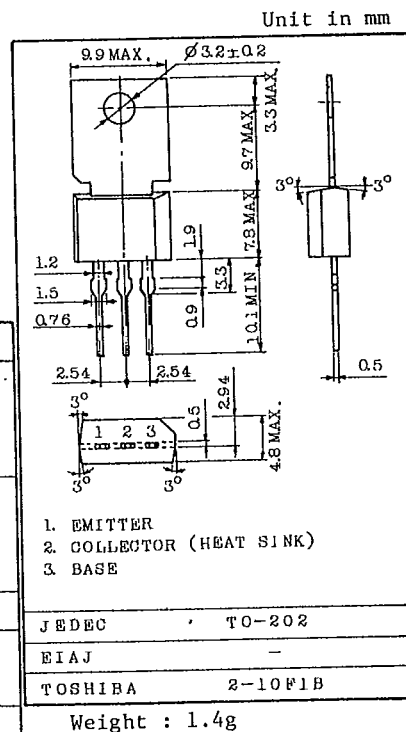
TBF869 TBF871

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

. PNP Complements are TBF870 and TBF872.

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$)

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 ($T_c=25^{\circ}\text{C}$)	
Base Current		I_B	20	mA
Junction Temperature		T_j	150	$^{\circ}\text{C}$
Storage Temperature Range		T_{stg}	-65 ~ 150	$^{\circ}\text{C}$
Solder Temperature, 1.5mm from Case for 10 Seconds		-	350	$^{\circ}\text{C}$



THERMAL CHARACTERISTICS

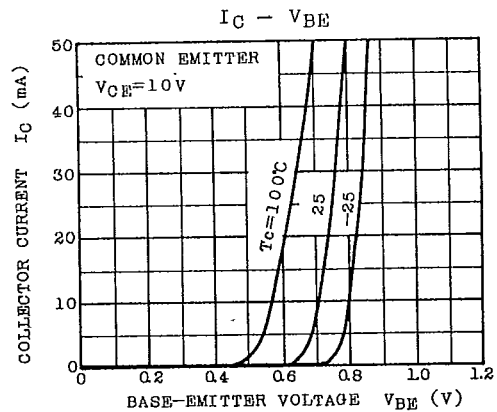
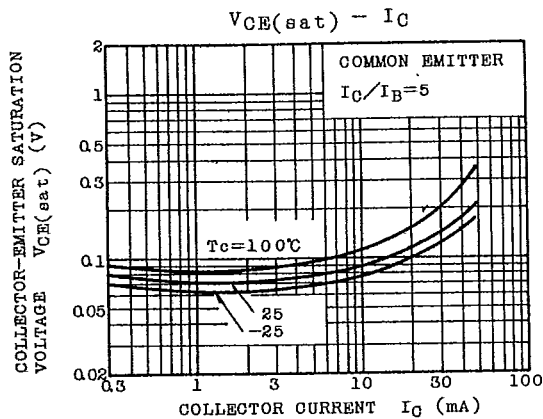
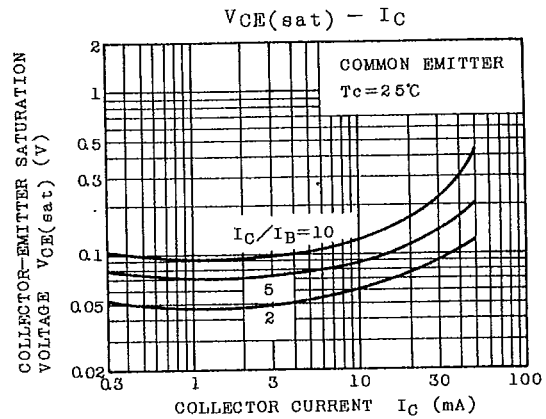
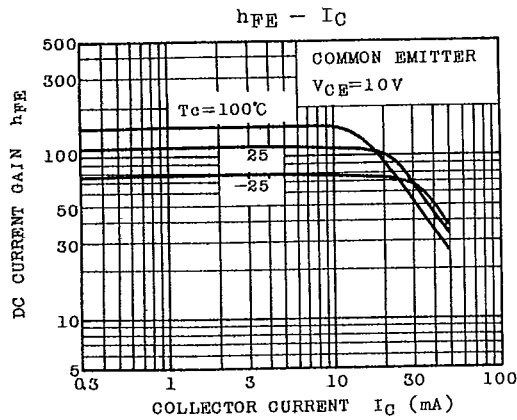
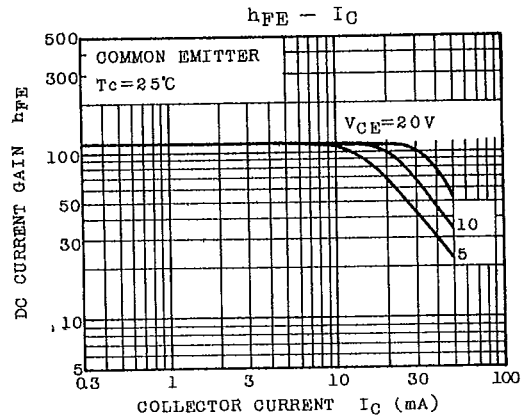
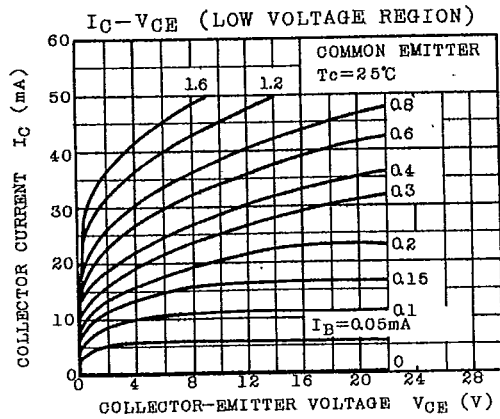
CHARACTERISTIC	SYMBOL	RATING	UNIT
Thermal Resistance (Junction-Ambient)	$R_{\theta JA}$	78.3	$^{\circ}\text{C/W}$
Thermal Resistance (Junction-Case)	$R_{\theta JC}$	25	$^{\circ}\text{C/W}$

TOSHIBA CORPORATION

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

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



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