

9097250 TOSHIBA (DISCRETE/OPTO)

56C 07690 D 7-33-65

SILICON NPN TRIPLE DIFFUSED TYPE

**2SC3309**

SWITCHING REGULATOR AND HIGH VOLTAGE SWITCHING APPLICATIONS.

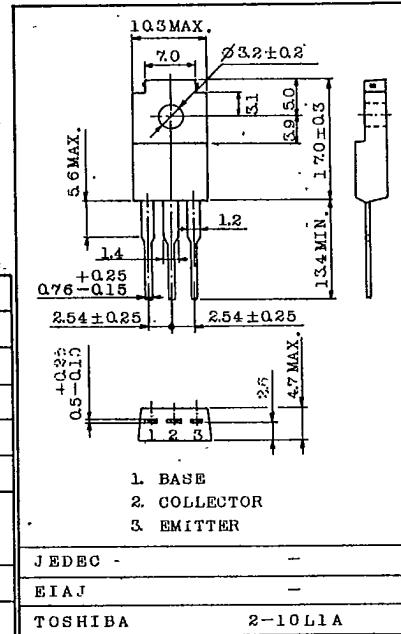
HIGH SPEED DC-DC CONVERTER APPLICATION.

## FEATURES:

- Excellent Switching Times  
 $t_r=1.0\mu s(\text{Max.})$ ,  $t_f=1.0\mu s(\text{Max.})$  at  $I_C=0.8A$
- High Collector Breakdown Voltage:  $V_{CE0}=400V$

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

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		$V_{CBO}$	500	V
Collector-Emitter Voltage		$V_{CEO}$	400	V
Emitter-Base Voltage		$V_{EBO}$	7	V
Collector Current		$I_C$	2	A
Base Current		$I_B$	0.5	A
Collector Power Dissipation	$T_a=25^\circ C$	$P_C$	2.0	W
	$T_c=25^\circ C$		20	
Junction Temperature		$T_j$	150	$^\circ C$
Storage Temperature Range		$T_{stg}$	-55 ~ 150	$^\circ C$

INDUSTRIAL APPLICATIONS  
Unit in mm

Weight : 2.1g

ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ C$ )

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		$I_{CBO}$	$V_{CB}=400V, I_E=0$	-	-	100	$\mu A$
Emitter Cut-off Current		$I_{EBO}$	$V_{EB}=7V, I_C=0$	-	-	1	mA
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	$I_C=1mA, I_E=0$	500	-	-	V
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	400	-	-	V
DC Current Gain		$h_{FE}$	$V_{CE}=5V, I_C=0.1A$	20	-	-	
			$V_{CE}=5V, I_C=1A$	8	-	-	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_C=1A, I_B=0.2A$	-	-	1.0	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	$I_C=1A, I_B=0.2A$	-	-	1.5	V
Switching Time	Rise Time	$t_r$		-	-	1.0	$\mu s$
	Storage Time	$t_{stg}$		-	-	2.5	
	Fall Time	$t_f$		-	-	1.0	

TOSHIBA CORPORATION

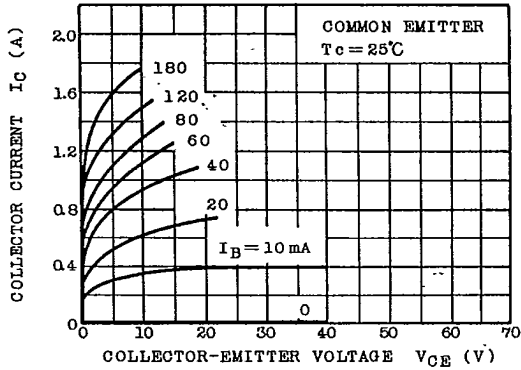
9097250 TOSHIBA (DISCRETE/OPTO)

56C 07691

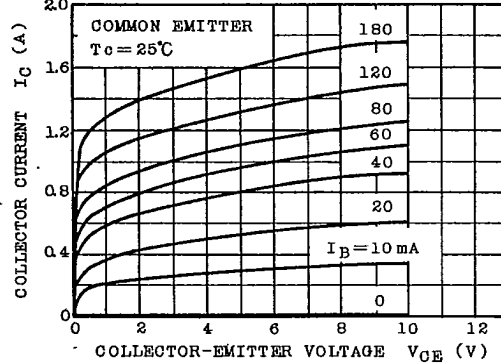
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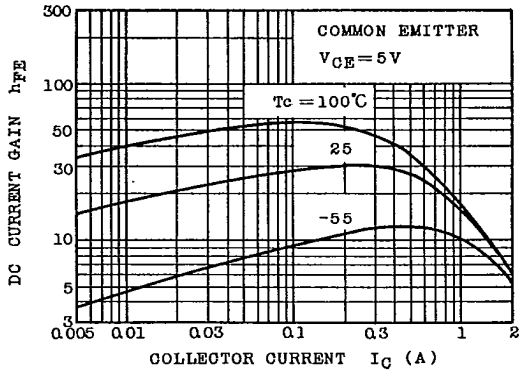
STATIC CHARACTERISTICS



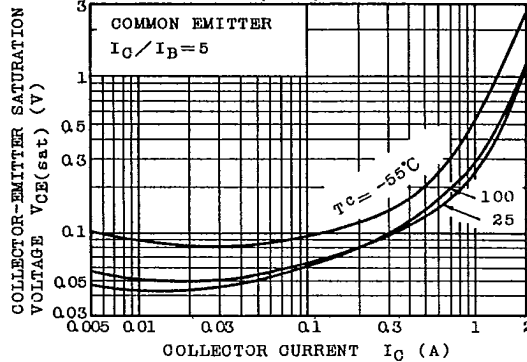
I<sub>C</sub> - V<sub>CE</sub> (LOW VOLTAGE REGION)



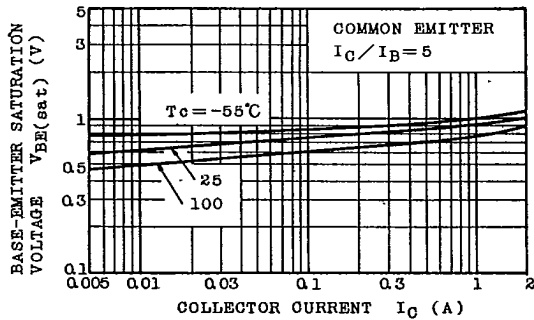
h<sub>FE</sub> - I<sub>C</sub>



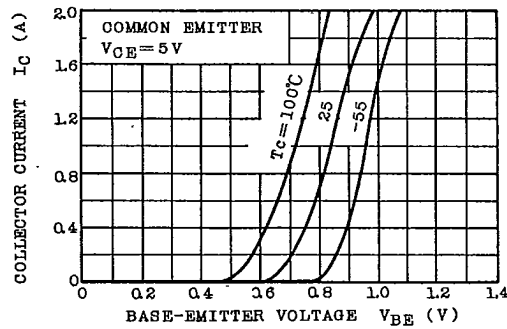
V<sub>CE(sat)</sub> - I<sub>C</sub>



V<sub>BE(sat)</sub> - I<sub>C</sub>

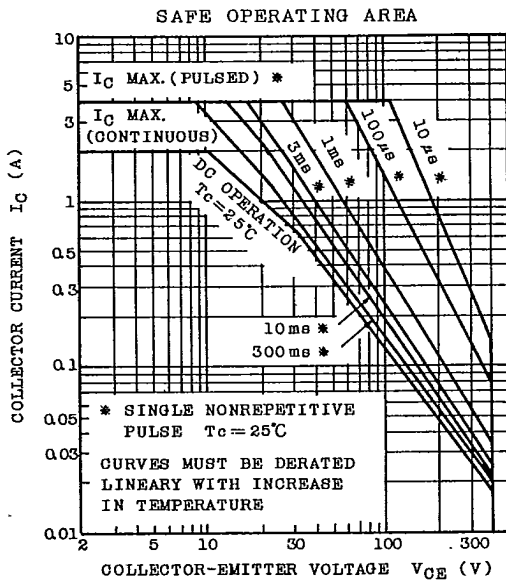
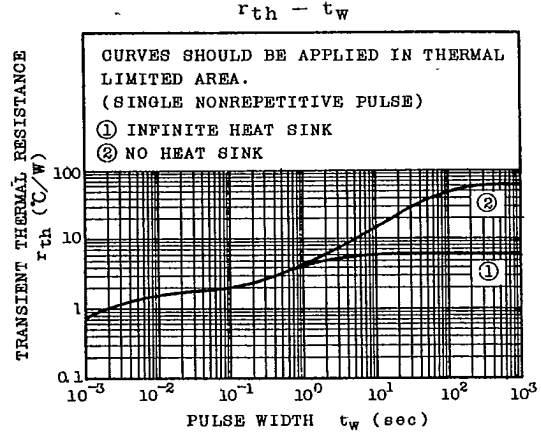
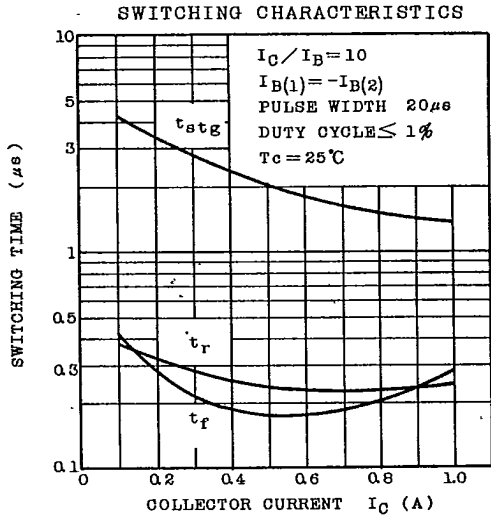


I<sub>C</sub> - V<sub>BE</sub>



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