SILICON NPN TRIPLE DIFFUSED TYPE
(DARLINGTON POWER)

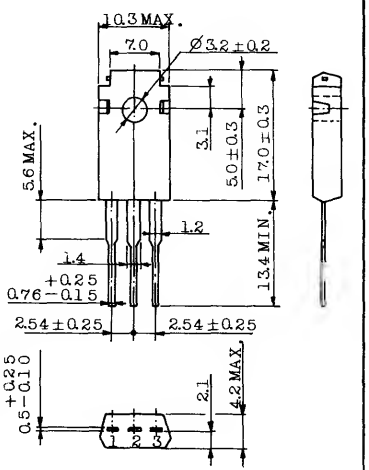
2SD1357
2SD1358
2SD1359

HIGH POWER SWITCHING APPLICATIONS.
HAMMER DRIVE, PULSE MOTOR DRIVE APPLICATIONS.

INDUSTRIAL APPLICATIONS

FEATURES:
- High DC Current Gain: h_{FE}=2000(Min.)(at V_{CE}=3V, I_C=3A)
- Low Saturation Voltage: $V_{CE(sat)}$=1.5V(Max.)(at I_C=3A)
- Complementary to 2SB997, 2SB998, 2SB999

Unit in mm



1. BASE
2. COLLECTOR
3. EMITTER

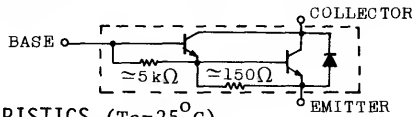
JEDEC	—
EIAJ	—
TOSHIBA	2-10K1A

Weight : 2.0g

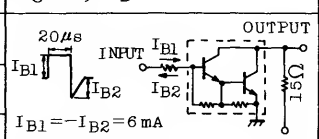
MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage	2SD1357	V_{CBO}	100	V
	2SD1358		80	
	2SD1359		60	
Collector-Emitter Voltage	2SD1357	V_{CEO}	100	V
	2SD1358		80	
	2SD1359		60	
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current		I_C	7	A
Base Current		I_B	0.2	A
Collector Power Dissipation (Tc=25°C)		P_C	40	W
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55 ~ 150	°C

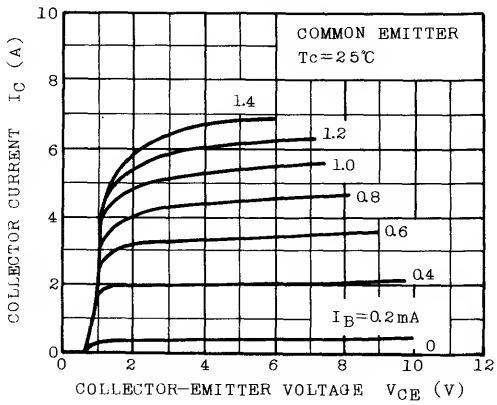
EQUIVALENT CIRCUIT



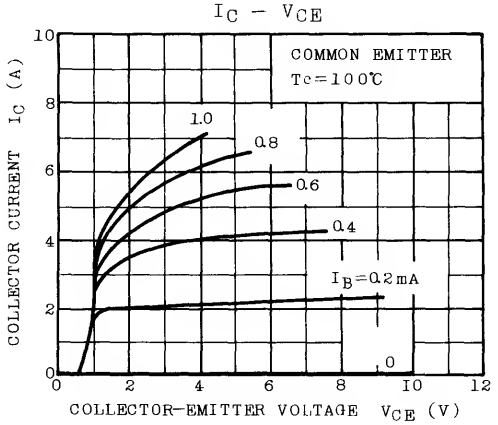
ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	2SD1357	I_{CBO}	V_{CB}=100V, I_E=0	−	−	100	μA
	2SD1358		V_{CB}=80V, I_E=0	−	−	100	
	2SD1359		V_{CB}=60V, I_E=0	−	−	100	
Emitter Cut-off Current		I_{EBO}	V_{EB}=5V, I_C=0	−	−	3.0	mA
Collector-Emitter Breakdwon Voltage	2SD1357	$V_{(BR)CEO}$	I_C=50mA, I_B=0	100	−	−	V
	2SD1358			80	−	−	
	2SD1359			60	−	−	
DC Current Gain		$h_{FE(1)}$	V_{CE}=3V, I_C=3A	2000	−	15000	
		$h_{FE(2)}$	V_{CE}=3V, I_C=7A	1000	−	−	
Collector-Emitter Saturation Voltage		$V_{CE(sat)(1)}$	I_C=3A, I_B=6mA	−	0.9	1.5	V
		$V_{CE(sat)(2)}$	I_C=7A, I_B=14mA	−	1.2	2.0	
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	I_C=3A, I_B=6mA	−	1.5	2.5	V
Switching Time	Turn-on Time	t_{on}		−	0.8	−	μs
	Storage Time	t_{stg}		−	3.0	−	
	Fall Time	t_f		−	2.5	−	

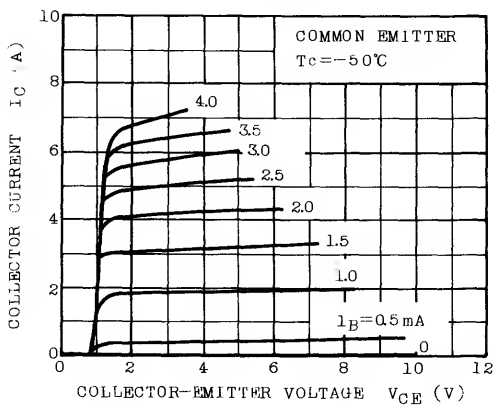
$I_C - V_{CE}$



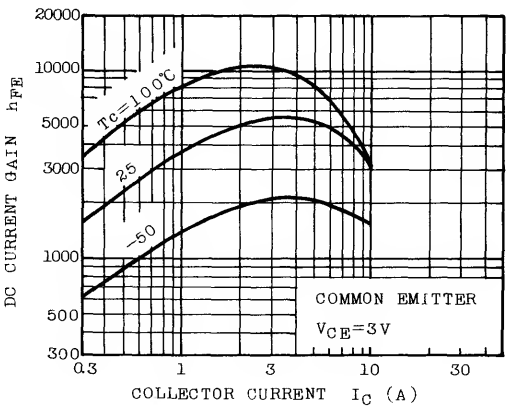
$I_C - V_{CE}$



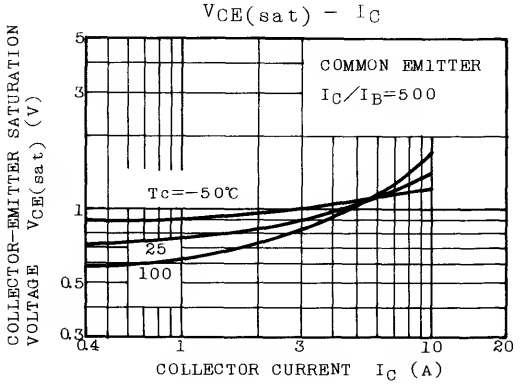
$I_C - V_{CE}$



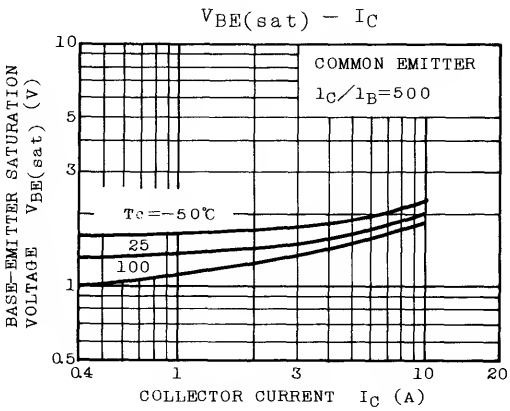
$h_{FE} - I_C$



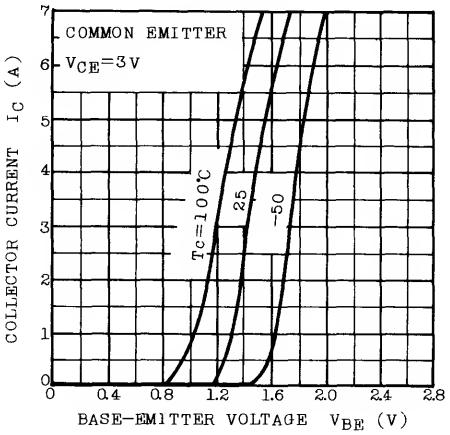
$V_{CE(sat)} - I_C$



$V_{BE(sat)} - I_C$



$I_C - V_{BE}$



SAFE OPERATING AREA