2SD1336, 2SD1336A

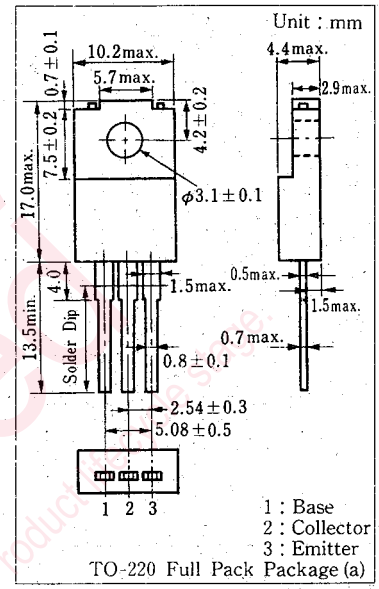
Silicon NPN Triple-Diffused Planar Darlington Type

Power Switching

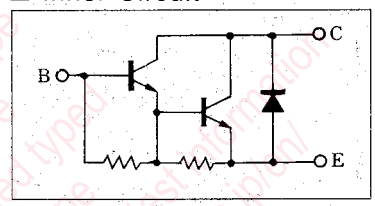
■ Features

- High speed switching
- Good linearity of DC current gain (h_{FE})
- "Full Pack" package for simplified mounting on a heat sink with one screw

■ Package Dimensions



■ Inner Circuit



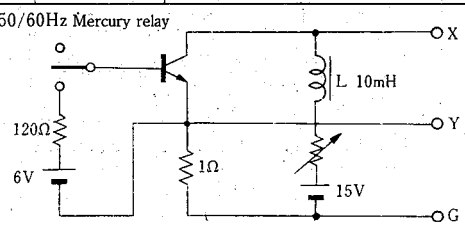
■ Absolute Maximum Ratings (Tc=25°C)

Item		Symbol	Value	Unit
Collector-base voltage	2SD1336	V_{CBO}	150	V
	2SD1336A		180	
Collector-emitter voltage	2SD1336	V_{CEO}	100	V
	2SD1336A		120	
Emitter-base voltage		V_{EBO}	8	V
Peak collector current		I_{CP}	10	A
Collector current		I_C	6	A
Collector power dissipation	Tc=25°C	P_C	35	W
	Ta=25°C		2	
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	−55 ~ +150	°C

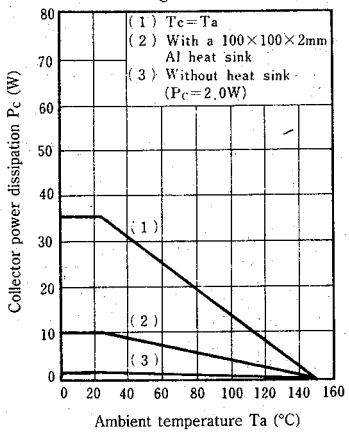
■ Electrical Characteristics (Tc=25°C)

Item		Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	2SD1336	I_{CBO}	V_{CB}=150 V, I_E=0			100	μA
	2SD1336A		V_{CB}=180 V, I_E=0			100	
Collector cutoff current	2SD1336	$V_{CE(sus)}$*	I_C=2 A, L=10 mH	100			V
	2SD1336A		I_C=2 A, L=10 mH	120			
Emitter-base voltage		V_{EBO}	I_E=200 mA, I_C=0	8			V
DC current gain		h_{FE}	V_{CE}=4 V, I_C=5 A	1500			
Collector-emitter saturation voltage		$V_{CE(sat)}$	I_C=5 A, I_B=12.5 mA			1.5	V
Base-emitter saturation voltage		$V_{BE(sat)}$	I_C=5 A, I_B=12.5 mA			2.5	V
Transition frequency		f_T	V_{CE}=10V, I_C=0.5A, f=1MHz		20		MHz
Turn-on time		t_{on}	I_C=5 A		0.7		μs
Storage time		t_{stg}	I_{B1}=12.5 mA, I_{B2}=−12.5 mA		4.0		μs
Fall time		t_f	V_{CC}=50 V		1.5		μs

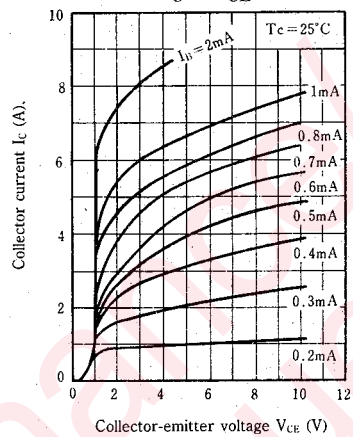
*$V_{CEO(sus)}$ Test method



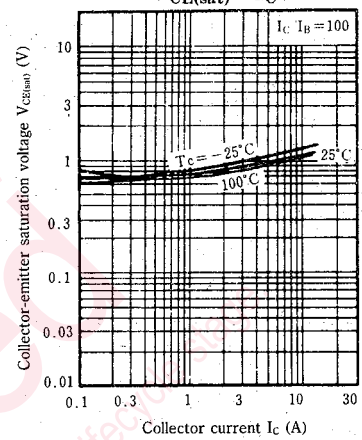
$P_C - Ta$



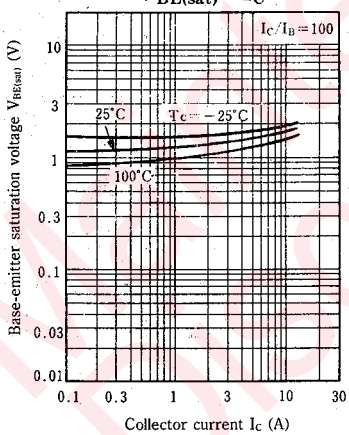
$I_C - V_{CE}$



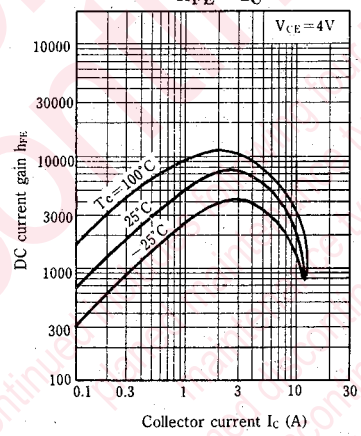
$V_{CE(sat)} - I_C$



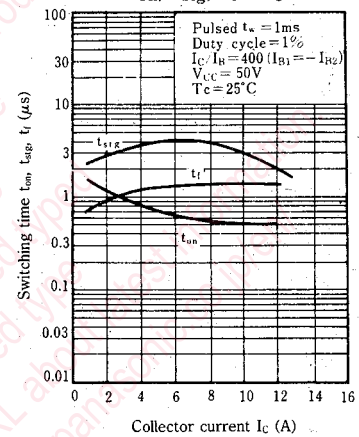
$V_{BE(sat)} - I_C$



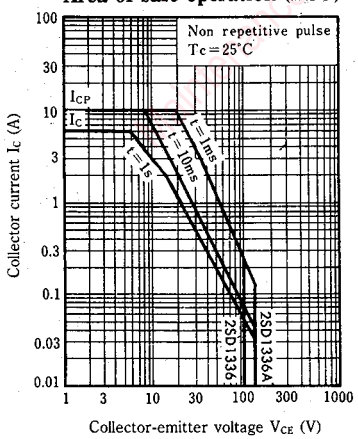
$h_{FE} - I_C$



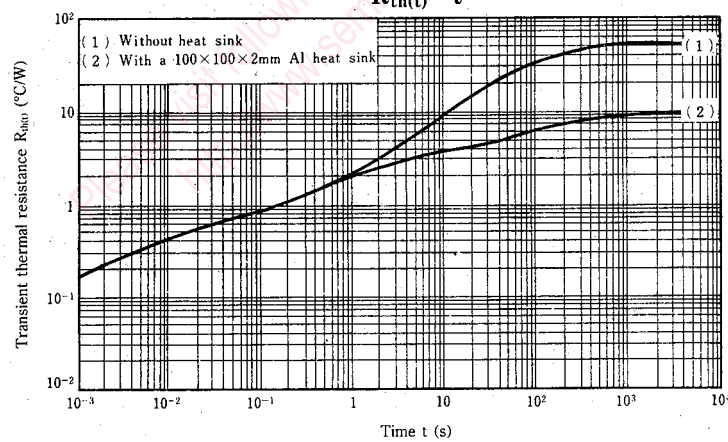
$t_{on}, t_{stg}, t_f - I_C$



Area of safe operation (ASO)



$R_{th(t)} - t$



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