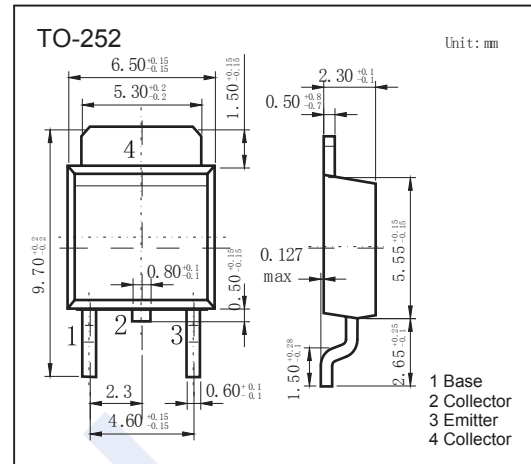
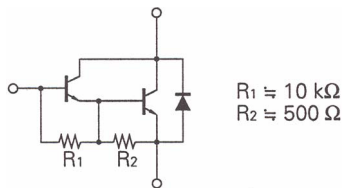


NPN Darlington Transistors

2SD1164

■ Features

- Collector Current Capability $I_C=2A$
- Collector Emitter Voltage $V_{CEO}=60V$



■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V _{CB0}	150	V
Collector - Emitter Voltage	V _{CEO}	60	
Emitter - Base Voltage	V _{EB0}	8	
Collector Current - Continuous	I _C	2	A
Collector Current - Pulse (Note.1)	I _{CP}	4	
Collector Power Dissipation	P _C	2	W
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{stg}	-55 to 150	

Note.1: $PW \leq 10 \text{ ms}$, Duty Cycle $\leq 50\%$

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	$I_C = 100 \mu A, I_E = 0$	150			V
Collector- emitter breakdown voltage	V_{CEO}	$I_C = 1 mA, I_B = 0$	60			
Emitter - base breakdown voltage	V_{EBO}	$I_E = 100 \mu A, I_C = 0$	8			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 60 V, I_E = 0$			10	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5 V, I_C = 0$			1	mA
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 1A, I_B = 1mA$			1.5	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = 1A, I_B = 1mA$			1.2	
DC current gain	$h_{FE(1)}$	$V_{CE} = 2 V, I_C = 0.5 A$	1000			
	$h_{FE(2)}$	$V_{CE} = 2V, I_C = 1 A$	2000		30000	
Turn-on time	t_{on}	$I_C = 1A, I_{B1} = -I_{B2} = 1mA, V_{CC} = 50V, R_L = 50\Omega$		0.5		μs
Storage time	t_{stg}			1		
Fall time	t_f			1		

Note. $PW \leq 350\mu s$, Duty Cycle $\leq 2\%$

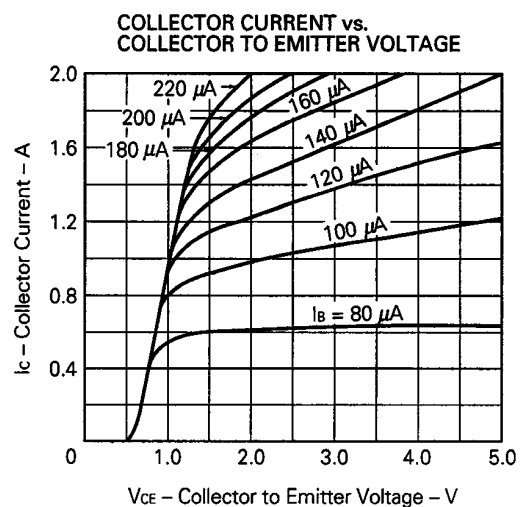
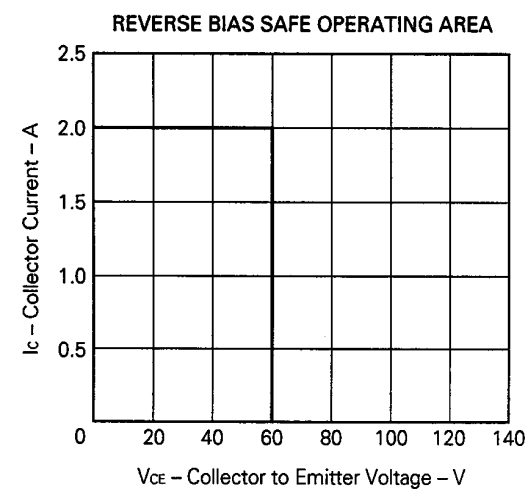
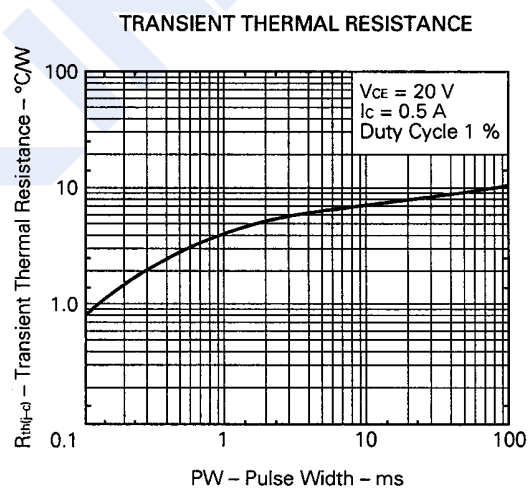
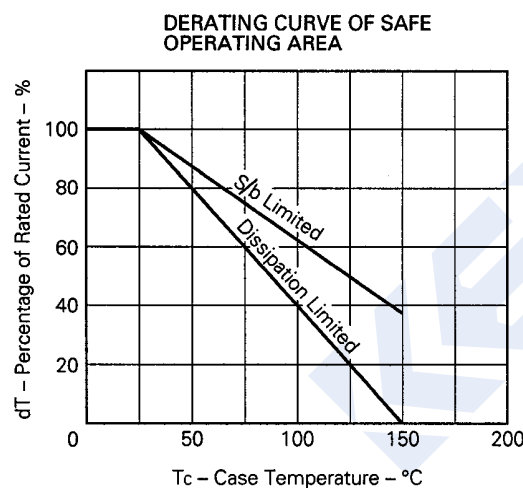
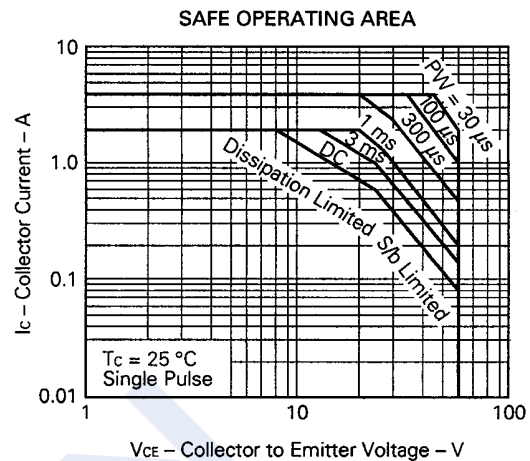
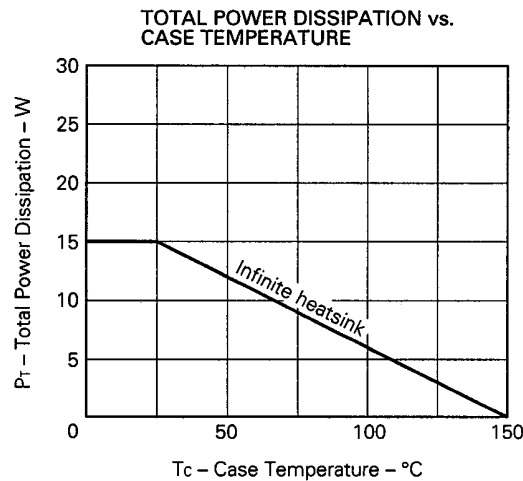
■ Classification of $h_{fe}(2)$

Type	2SD1164-M	2SD1164-L	2SD1164-K
Range	2000-5000	4000-10000	8000-30000

NPN Darlington Transistors

2SD1164

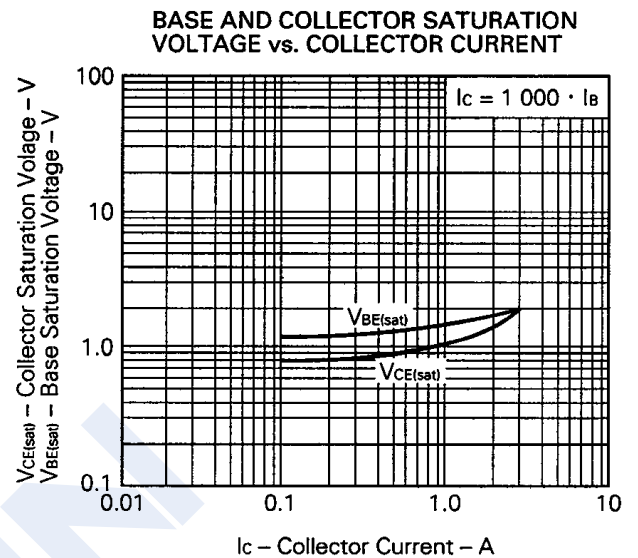
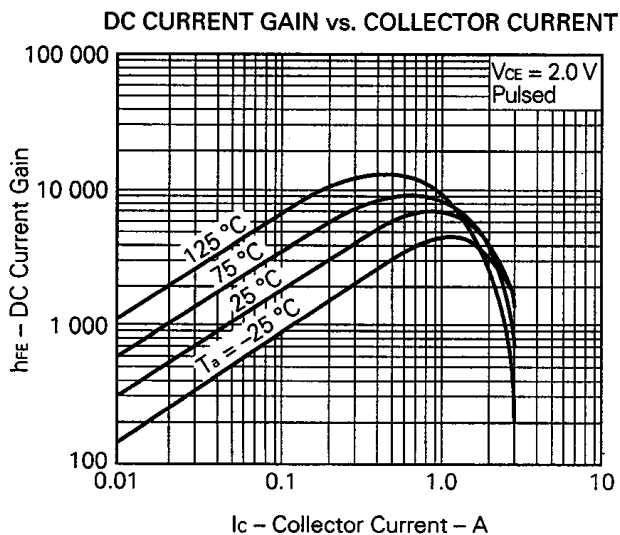
■ Typical Characteristics



NPN Darlington Transistors

2SD1164

■ Typical Characteristics



■ Switching Time & Test Circuit

