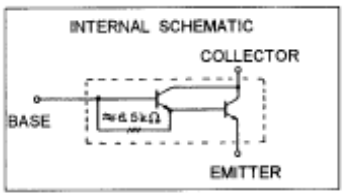
FCI Semiconductor *Data Sheet*

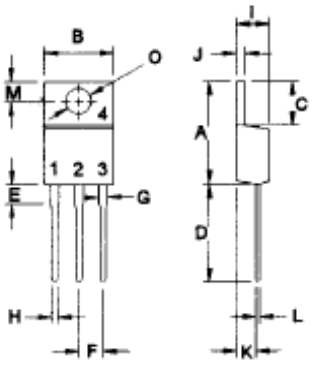
High Voltage Darlington Power Transistor
NPN Type 6 Amps, 250 Voltage, 30watts

2SD1088

FEATURES:
*Collector-Emitter Sustaining Voltage-
$V_{CEO(SUS)}$ = 250 V (Min)
* Collector-Emitter Saturation Voltage -
$V_{CE(sat)}$ =2.0 V (Max.) @ I_C = 4.0 A, I_B = 40mA
* High DC current Gain
hFE=2000 (Min)@I_C=2.0A,V_{CE}=2.0V



TO-220

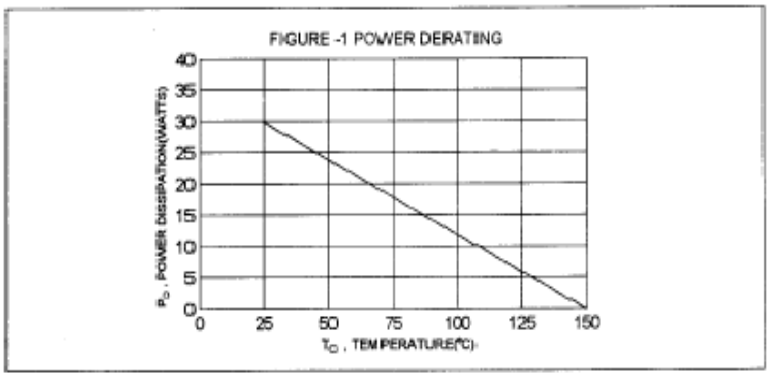


MAXIMUM RATINGS

Characteristic	Symbol	2SD1088	Unit
Collector-Emitter Voltage	V_{CEO}	250	V
Collector-Base Voltage	V_{CBO}	300	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current - Continuous - Peak	I_C I_{CM}	6.0 10	A
Base current	I_B	1.0	A
Total Power Dissipation @T_C = 25°C Derate above 25°C	P_D	30 0.24	W W/°C
Operating and Storage Junction Temperature Range	T_J,T_{STG}	-55 to +150	°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	Rθjc	4.16	°C/W



PIN 1.BASE
2.COLLECTOR
3.EMITTER
4.COLLECTOR(CASE)

DIM	MILLIMETERS	
	MIN	MAX
A	14.68	15.31
B	9.78	10.42
C	5.01	6.52
D	13.06	14.62
E	3.57	4.07
F	2.42	3.66
G	1.12	1.36
H	0.72	0.96
I	4.22	4.98
J	1.14	1.38
K	2.20	2.97
L	0.33	0.55
M	2.48	2.98
O	3.70	3.90

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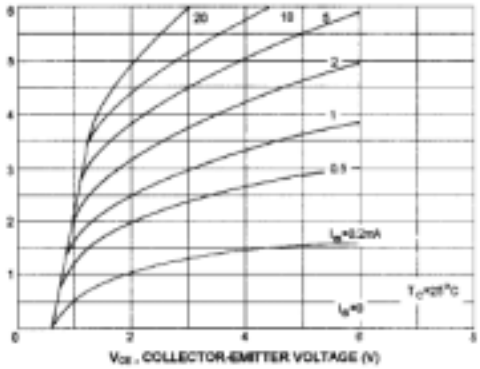
ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

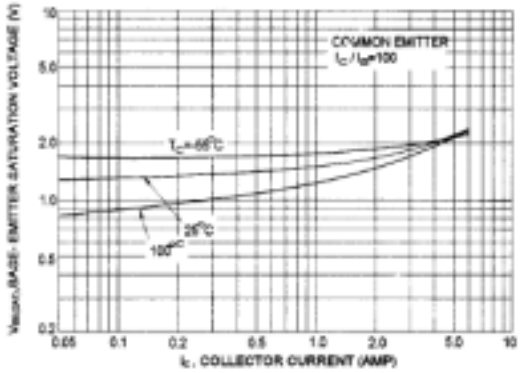
Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector-Emitter Sustaining Voltage (I_C= 0.5 A,L=40 mH)	$V_{CEO(sus)}$	250		V
Collector Cutoff Current (V_{CB}= 300 V, I_E= 0)	I_{CBO}		500	uA
Emitter Cutoff Current (V_{EB}= 5.0 V, I_C= 0)	I_{EBO}		500	uA
ON CHARACTERISTICS (1)				
DC Current Gain (I_C= 2.0 A, V_{CE}=2.0 V) (I_C= 4.0 A, V_{CE}=2.0 V)	hFE	2000 200		
Collector-Emitter Saturation Voltage (I_C= 4.0 A, I_B= 40 mA)	$V_{CE(sat)}$		2.0	V
Base-Emitter Saturation Voltage (I_C= 4.0 A, I_B= 40 mA)	$V_{BE(sat)}$		2.5	V
SWITCHING CHARACTERISTICS				
On Time	V_{CC}= 100V, I_C= 4.0 A I_{B1}=-I_{B2}= 40 mA R_L=25 ohm	t_{on}	1.0(typ)	us
Storage Time		t_s	8.0(typ)	us
Fall Time		t_f	5.0(typ)	us

(1) Pulse Test: Pulse Width =300 us,Duty Cycle ≤ 2.0%

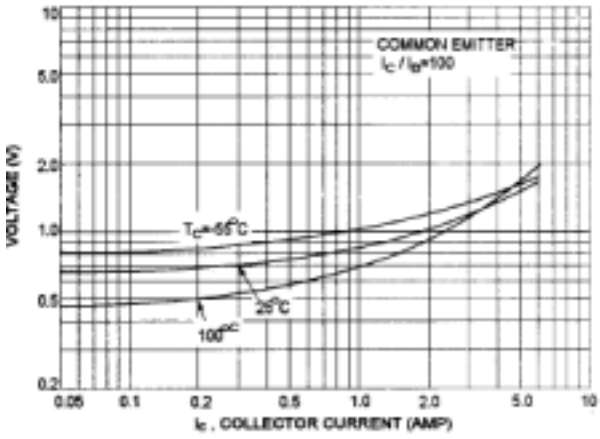
Ic - Vce



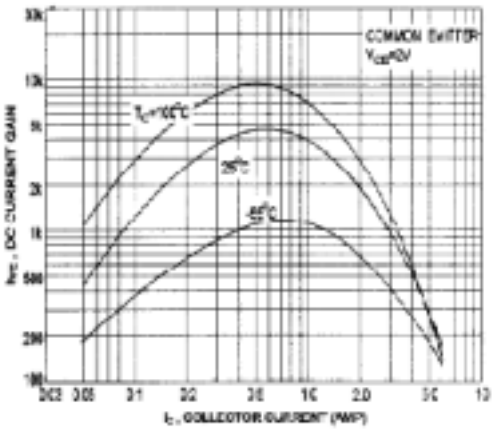
$V_{BE(sat)}$ - I_C



$V_{CE(sat)}$ - I_C



DC CURRENT GAIN



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SAFE OPERATING AREA (SOA)