MOSPEC

DARLINGTON COMPLEMETARY
SILICON POWER TRANSISTORS

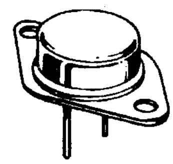
...designed for use general-purpose Amplifier and low -frequency switching applications.

FEATURES

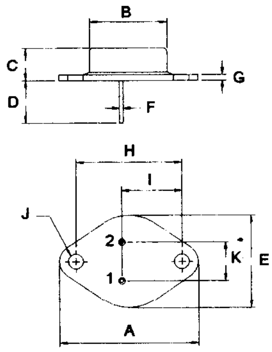
* High DC Current Gain@I_C= 10A
  hFE= 2400(Typ)- 2N6282,2N6283,2N6284
  = 4000(Typ)-2N 6285,2N6286,2N6287
* Collector-Emitter Sustaining Vlotage-
  $V_{CEO(sus)}$= 60V (Min)-2N6282,2N6285
  = 80V (Min)-2N6283,2N6286
  =100V(Min)-2N6284,2N6287
* Monolithic Construction With Built-In Base-Emitter Shunt Resistors

NPN	PNP
2N6282	2N6285
2N6283	2N6286
2N6284	2N6287

DARLINGTON
20 AMPERE
COMPLEMENTARY SILICON
POWER TRANSISTORS
60-100 Volts
160 Watts



TO-3



PIN 1.BASE
2.EMITTER
COLLECTOR(CASE)

DIM	MILLIMETERS	
	MIN	MAX
A	38.75	39.96
B	19.28	22.23
C	7.96	9.28
D	11.18	12.19
E	25.20	26.67
F	0.92	1.09
G	1.38	1.62
H	29.90	30.40
I	16.64	17.30
J	3.88	4.36
K	10.67	11.18

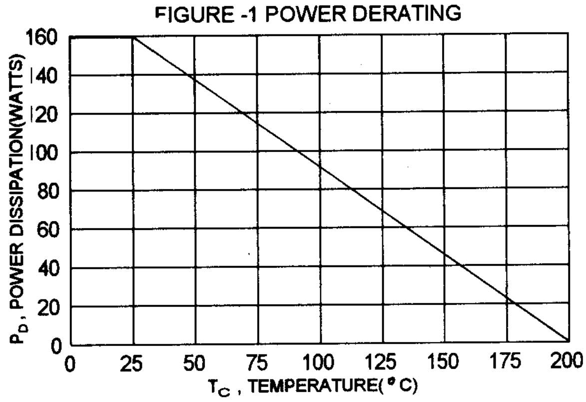
MAXIMUM RATINGS

Characteristic	Symbol	2N6282 2N6285	2N6283 2N6286	2N6284 2N6287	Unit
Collector-Emitter Voltage	V_{CEO}	60	80	100	V
Collector-Base Voltage	V_{CBO}	60	80	100	V
Emitter-Base Voltage	V_{EBO}	5.0			V
Collector Current - Continuous - Peak	I_C	20 40			A
Base Current	I_B	0.5			A
Total Power Dissipation@T_C = 25°C Derate above 25°C	P_D	160 0.915			W W/°C
Operating and Storage Junction Temperature Range	T_J ,T_{STG}	-65 to +200			°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	Rθjc	1.09	°C/W

FIGURE -1 POWER DERATING

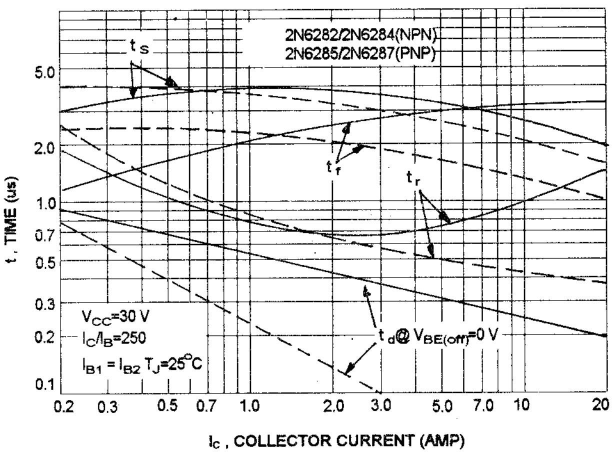


ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

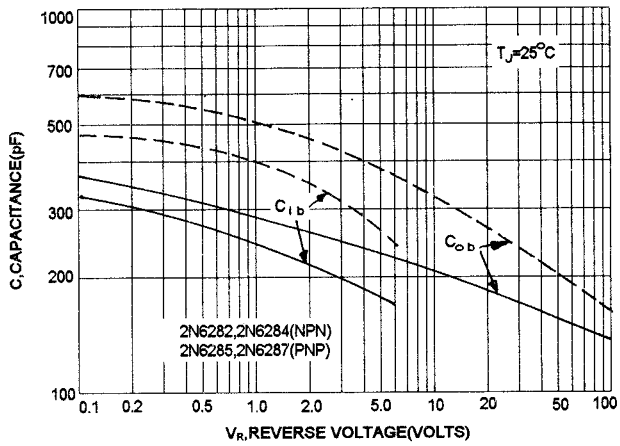
Characteristic		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector - Emitter Sustaining Voltage (1) (I_C = 100 mA, I_B = 0)	2N6282, 2N6285 2N6283, 2N6286 2N6284, 2N6287	$V_{CEO(SUS)}$	60 80 100		V
Collector Cutoff Current (V_{CE} = 30 V, I_B = 0) (V_{CE} = 40 V, I_B = 0) (V_{CE} = 50 V, I_B = 0)	2N6282, 2N6285 2N6283, 2N6286 2N6284, 2N6287	I_{CEO}		1.0 1.0 1.0	mA
Collector Cutoff Current (V_{CE} = 60 V, $V_{BE(off)}$ = 1.5 V) (V_{CE} = 80 V, $V_{BE(off)}$ = 1.5 V) (V_{CE} = 100 V, $V_{BE(off)}$ = 1.5 V) (V_{CE} = 60 V, $V_{BE(off)}$ = 1.5 V, T_C = 150°C) (V_{CE} = 80 V, $V_{BE(off)}$ = 1.5 V, T_C = 150°C) (V_{CE} = 100 V, $V_{BE(off)}$ = 1.5 V, T_C = 150°C)	2N6282, 2N6285 2N6283, 2N6286 2N6284, 2N6287 2N6282, 2N6285 2N6283, 2N6286 2N6284, 2N6287	I_{CEX}		0.5 0.5 0.5 5.0 5.0 5.0	mA
Emitter Cutoff Current (V_{EB} = 5.0 V , I_C = 0)		I_{EBO}		2.0	mA
ON CHARACTERISTICS (1)					
DC Current Gain (I_C = 10 A, V_{CE} = 3.0 V) (I_C = 20 A, V_{CE} = 3.0 V)		hFE	750 100	18000	
Collector-Emitter Saturation Voltage (I_C = 10 A, I_B = 40mA) (I_C = 20 A, I_B = 200mA)		$V_{CE(sat)}$		2.0 3.0	V
Base-Emitter Saturation Voltage (I_C = 20 A, I_B = 200mA)		$V_{BE(sat)}$		4.0	V
Base-Emitter On Voltage (I_C = 10 A, V_{CE} = 3.0 V)		$V_{BE(on)}$		2.8	V
DYNAMIC CHARACTERISTICS					
Output Capacitance (V_{CB} = 10 V, I_E = 0, f = 1.0 MHz)	2N6282,83,84 2N6285,86,87	C_{ob}		400 600	pF
Small-Signal Current Gain (I_C = 10 A, V_{CE} =3.0 V, f = 1.0 KHZ)		h_{fe}	300		

(1) Pulse Test: Pulse width ≦ 300 μs , Duty Cycle ≦ 2.0%

SWITCHING TIME

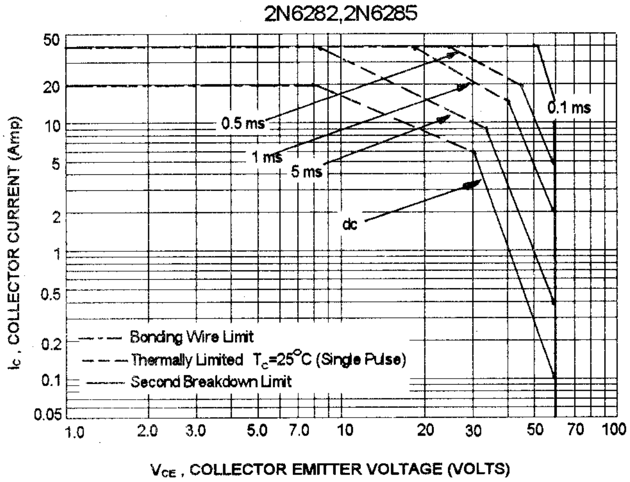


CAPACITANCES

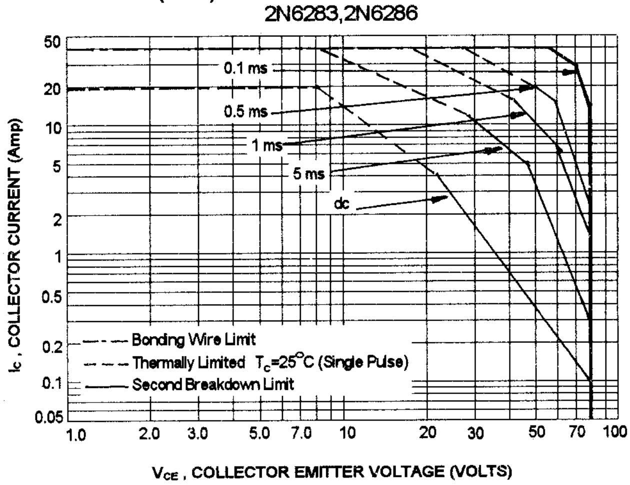


ACTIVE-REGION SAFE OPERATING AREA (SOA)

2N6282,2N6285

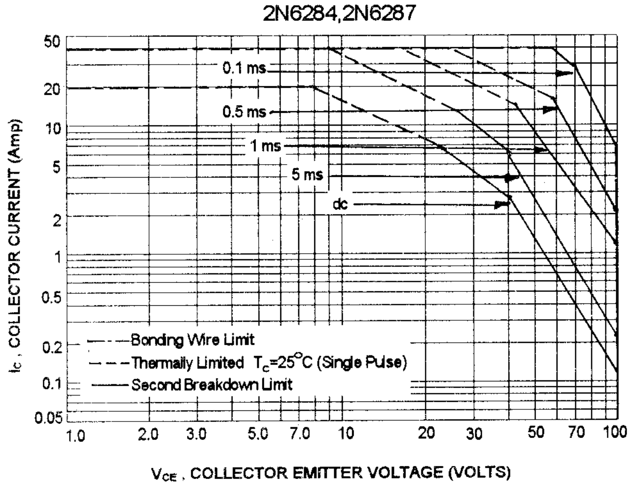


2N6283,2N6286



ACTIVE-REGION SAFE OPERATING AREA (SOA)

2N6284,2N6287

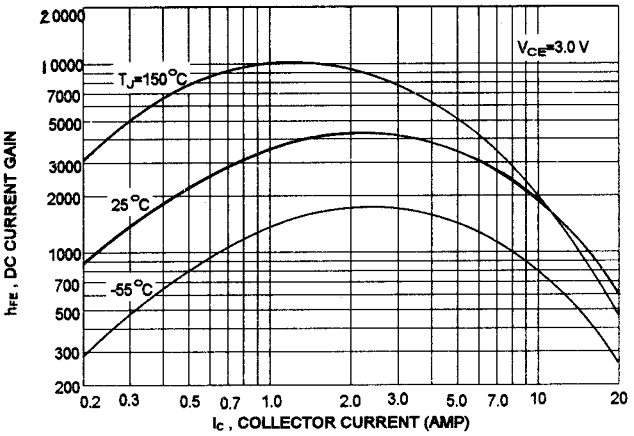


There are two limitation on the power handling ability of a transistor:average junction temperature and second breakdown safe operating area curves indicate I_C-V_{CE} limits of the transistor that must be observed for reliable operation i.e., the transistor must not be subjected to greater dissipation than curves indicate.

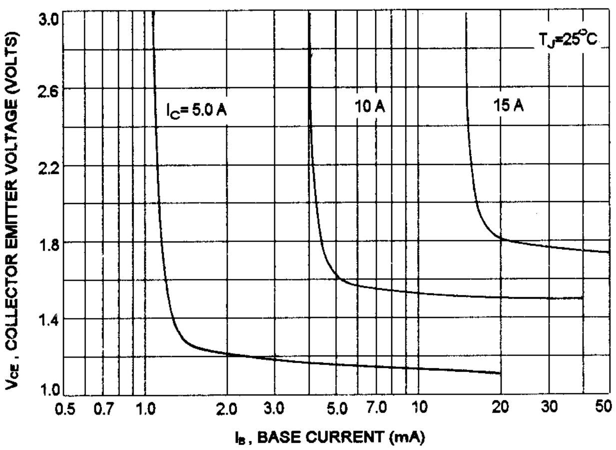
The data of SOA curve is base on $T_{J(PK)}$=200 °C;T_C is variable depending on conditions. second breakdown pulse limits are valid for duty cycles to 10% provided $T_{J(PK)}$<200°C,At high case temperatures, thermal limitation will reduce the power that can be handled to values less than the limitations imposed by second breakdown.

PNP 2N6282,2N6283,2N6284

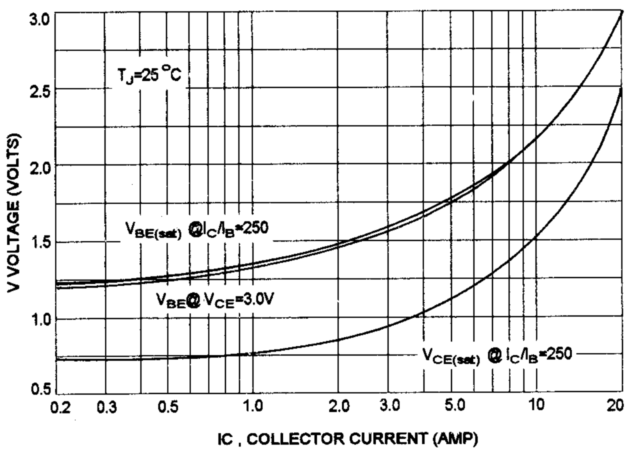
DC CURRENT GAIN



COLLECTOR SATURATION REGION

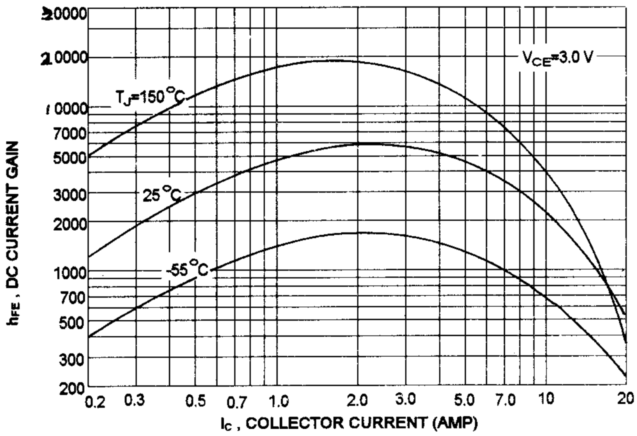


"ON" VOLTAGES

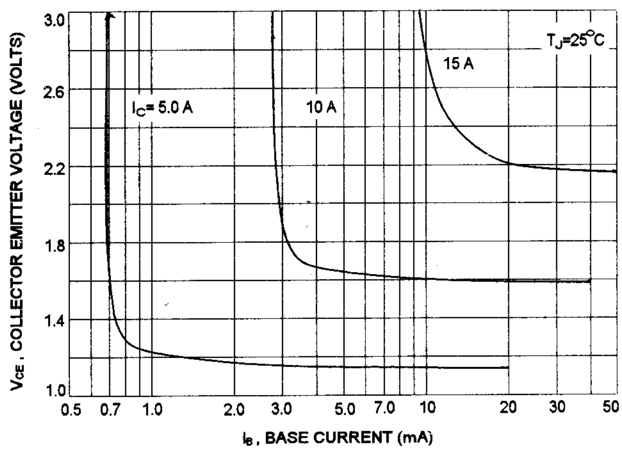


NPN 2N6285,2N6286,2N6287

DC CURRENT GAIN



COLLECTOR SATURATION REGION



"ON" VOLTAGES