File Number **1001**

2N6282, 2N6283, 2N6284, 2N6285, 2N6286, 2N6287

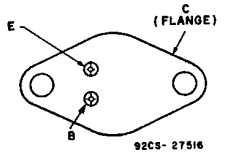
20-Ampere Complementary N-P-N and P-N-P Monolithic Darlington Power Transistors

60-80-100 Volts, 160 Watts
Gain of 2400 (Typ.) at 10 A (2N6282, 2N6283, 2N6284)
Gain of 3500 (Typ.) at 10 A (2N6285, 2N6286, 2N6287)

Features:

- Operates from IC without predriver
- Monolithic construction

TERMINAL DESIGNATIONS



JEDEC TO-204AA

The RCA-2N6282, 2N6283, and 2N6284 and the 2N6285, 2N6286, and 2N6287 are complementary n-p-n and p-n-p monolithic silicon Darlington transistors designed for general purpose amplifier and low-speed switching applications. The high gain of these devices makes it possible for them to be driven directly from integrated circuits.

These devices are supplied in the JEDEC TO-204AA steel hermetic package.

- High voltage ratings:
  $V_{CEO}(sus)$ = 60 V Min. – 2N6282, 2N6285●
  = 80 V Min. – 2N6283, 2N6286●
  = 100 V Min. – 2N6284, 2N6287●

Applications:

- Power switching
- Hammer drivers
- Series and shunt regulators
- Audio amplifiers

MAXIMUM RATINGS, *Absolute-Maximum Values:*

	2N6282 2N6285●	2N6283 2N6286●	2N6284 2N6287●	
* V_{CBO}	60	80	100	V
* $V_{CEO}(sus)$	60	80	100	V
* V_{EBO}	5	5	5	V
* I_C	20	20	20	A
* I_{CM}	40	40	40	A
* I_B	0.5	0.5	0.5	A
* P_T				
$T_C \leq 25°C$	160	160	160	W
$T_C > 25°C$ Derate linearly		0.915		W/°C
* Tstg, TJ		−65 to 200		°C
* T_L				
At distances ≥ 1/16 in. (1.58 mm) from case for 10 s max.		235		°C

* In accordance with JEDEC registration data.
● For p-n-p devices, voltage and current values are negative.

2N6282, 2N6283, 2N6284, 2N6285, 2N6286, 2N6287

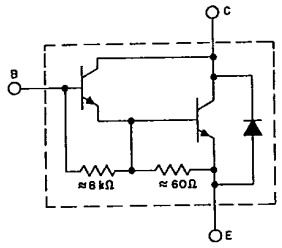


Fig. 1 – Schematic diagram for 2N6282, 2N6283, and 2N6284.

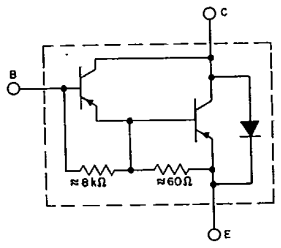


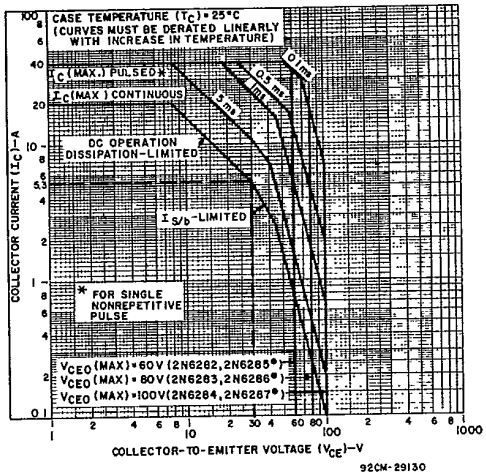
Fig. 2 – Schematic diagram for 2N6285, 2N6286, and 2N6287.

ELECTRICAL CHARACTERISTICS, *at Case Temperature (T_C) = 25°C Unless Otherwise Specified*

	CHARACTERISTIC	TEST CONDITIONS				LIMITS						UNITS
		VOLTAGE V dc		CURRENT A dc		2N6282 2N6285●		2N6283 2N6286●		2N6284 2N6287●		
		V_{CE}	V_{BE}	I_C	I_B	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	
*	I_{CEO}	30			0	–	1	–	–	–	–	mA
		40			0	–	–	–	1	–	–	
		50			0	–	–	–	–	–	1	
*	I_{CEX}	60	–1.5			–	0.5	–	–	–	–	
		80	–1.5			–	–	–	0.5	–	–	
		100	–1.5			–	–	–	–	–	0.5	
	T_C = 150°C	60	–1.5			–	5	–	–	–	–	
		80	–1.5			–	–	–	5	–	–	
		100	–1.5			–	–	–	–	–	5	
*	I_{EBO}		–5	0		–	2	–	2	–	2	mA
*	$V_{CEO(sus)}$			0.1[a]	0	60	–	80	–	100	–	V
*	h_{FE}	3		20[a]		100	–	100	–	100	–	
		3		10[a]		750	18,000	750	18,000	750	18,000	
*	$V_{CE(sat)}$			20[a]	0.2	–	3	–	3	–	3	V
				10[a]	0.04	–	2	–	2	–	2	
*	V_{BE}	3		10[a]		–	2.8	–	2.8	–	2.8	V
*	$V_{BE(sat)}$			20[a]	0.2	–	4	–	4	–	4	V
*	h_{fe} f = 1 kHz	3		10		300	–	300	–	300	–	
*	$\|h_{fe}\|$ f = 1 MHz	3		10		4	–	4	–	4	–	
*	C_{ob} V_{CB} = 10 V, I_E 0, f = 0.1 MHz											
	2N6282-84					–	400	–	400	–	400	pF
	2N6285-87					–	600	–	600	–	600	
	$I_{S/b}$ t = 1 s, nonrep.	30				5.3	–	5.3	–	5.3	–	A
	$R_{\theta JC}$						1.09	–	1.09	–	1.09	°C/W

[a] Pulsed: Pulse duration = 300 μs, duty factor = 1.8%. ● For p-n-p devices, voltage and current values are negative.
* In accordance with JEDEC registration data.

2N6282, 2N6283, 2N6284, 2N6285, 2N6286, 2N6287



*FOR p-n-p DEVICES, VOLTAGE AND CURRENT VALUES ARE NEGATIVE

Fig. 3 — Maximum operating areas for all types.

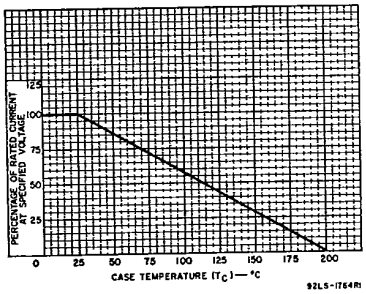


Fig. 4 — Current derating curve for all types.

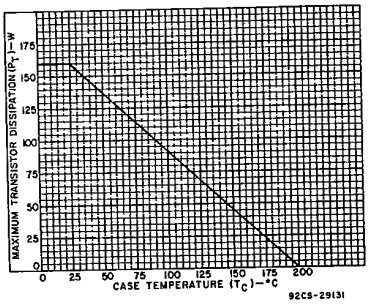


Fig. 5 — Power derating curve for all types.

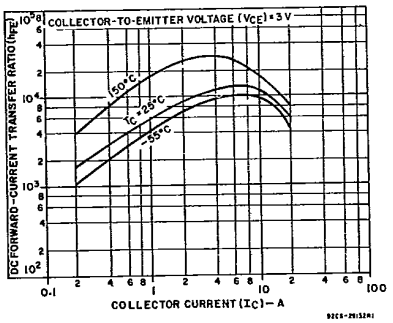


Fig. 6 — Typical dc beta characteristics for 2N6282, 2N6283, and 2N6284.

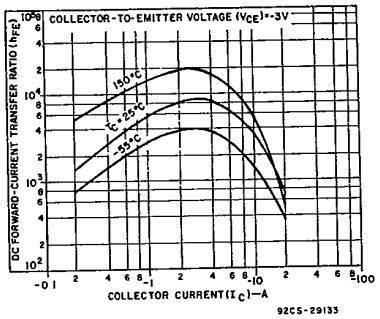


Fig. 7 — Typical dc beta characteristics for 2N6285, 2N6286, and 2N6287.

2N6282, 2N6283, 2N6284, 2N6285, 2N6286, 2N6287

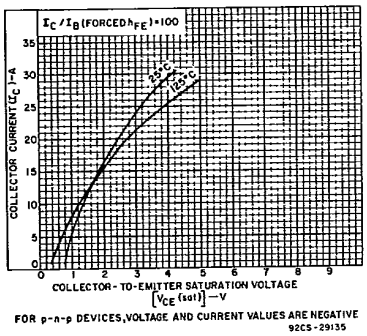


Fig. 8 — Typical saturation characteristics for all types.

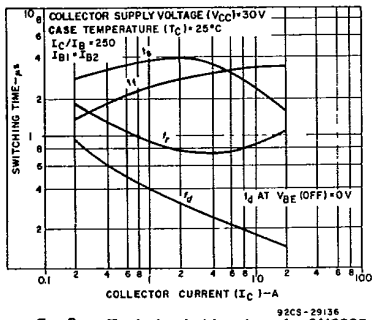


Fig. 9 — Typical switching times for 2N6282, 2N6283, and 2N6284.

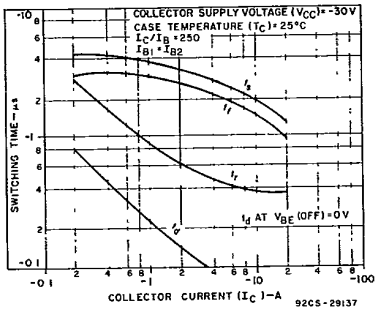


Fig. 10 — Typical switching times for 2N6285, 2N6286, and 2N6287.

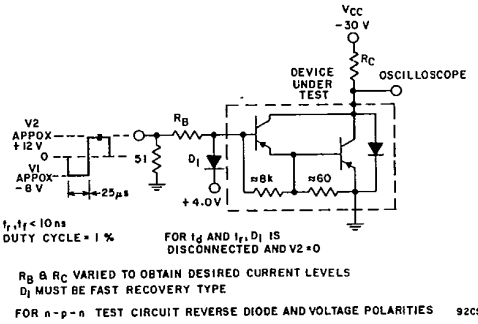


Fig. 11 – Switching times test circuit.