

# DARLINGTON POWER TRANSISTOR 2SD2217

### NPN SILICON EPITAXIAL TRANSISTOR (DARLINGTON CONNECTION) FOR LOW-FREQUENCY POWER AMPLIFIERS AND LOW-SPEED SWITCHING

The 2SD2217 is a mold power transistor developed for low-frequency power amplifiers and low-speed switching. This transistor is ideal for direct driving from the IC out to drivers such as pulse motor drivers and relay drivers in OA and FA equipment.

#### QUALITY GRADES

- Standard

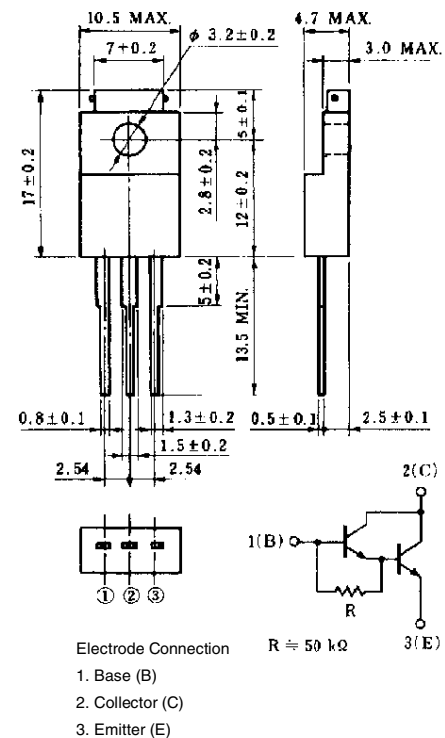
Please refer to "Quality Grades on NEC Semiconductor Devices" (Document No. C11531E) published by NEC Corporation to know the specification of quality grade on the devices and its recommended applications.

#### ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	300	V
Collector to emitter voltage	$V_{CEO}$	300	V
Emitter to base voltage	$V_{EBO}$	7	V
Collector current	$I_{C(DC)}$	300	mA
Collector current	$I_{C(pulse)^*}$	600	mA
Base current	$I_{B(DC)}$	30	mA
Total power dissipation	$P_T (T_c = 25^\circ C)$	25	W
Total power dissipation	$P_T (T_a = 25^\circ C)$	2.0	W
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

\*  $PW \leq 10$  ms, duty cycle  $\leq 50\%$

#### PACKAGE DRAWING (UNIT: mm)



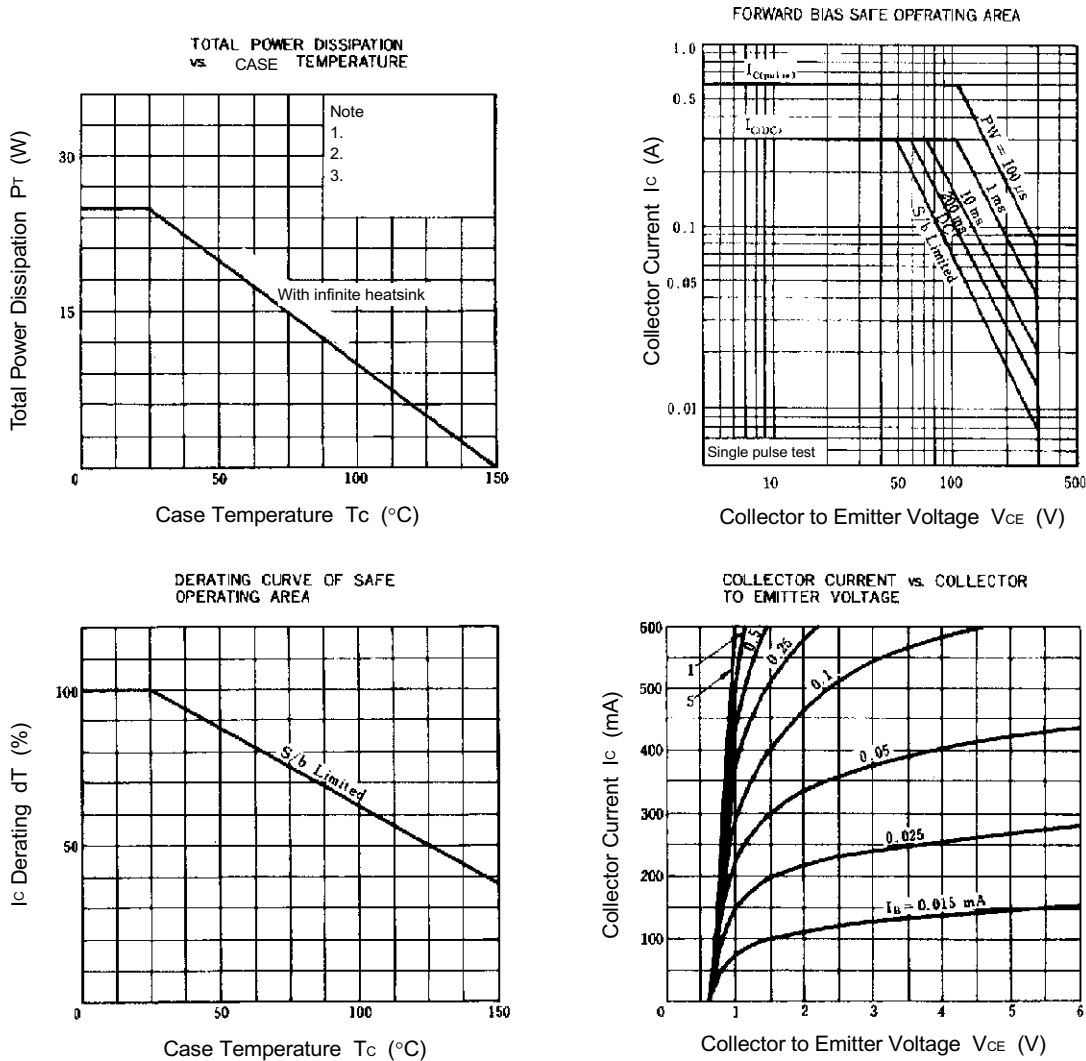
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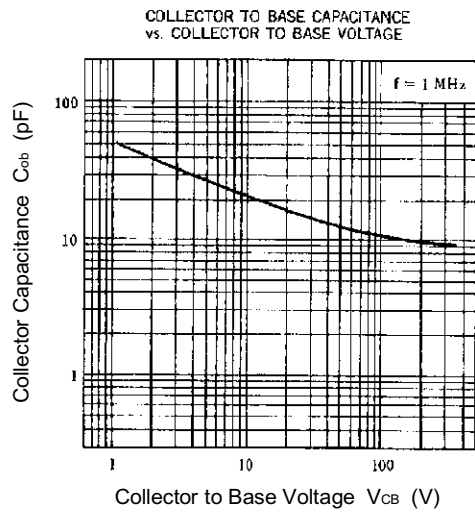
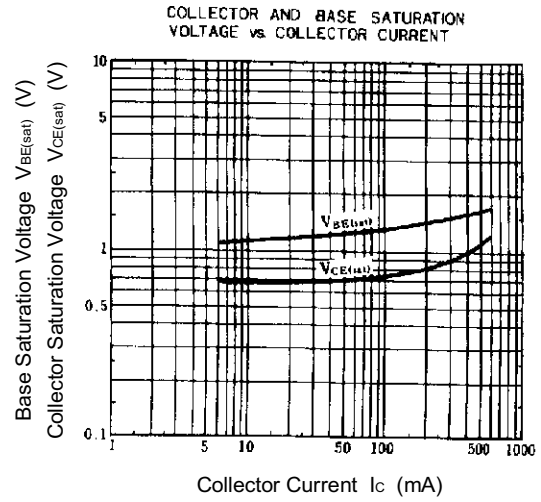
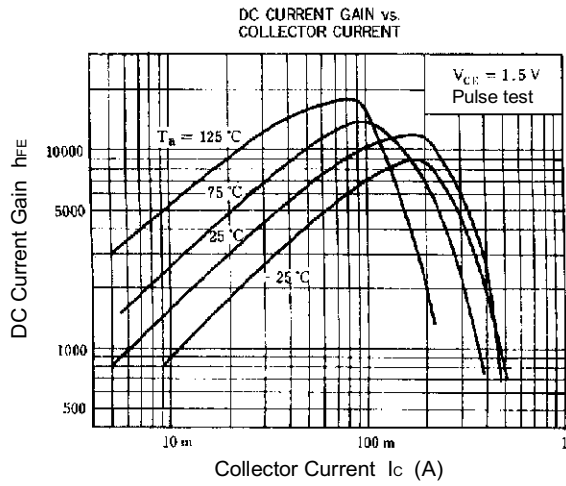
**ELECTRICAL CHARACTERISTICS (Ta = 25°C)**

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 300\text{ V}, I_E = 0$			10	$\mu\text{A}$
Collector cutoff current	$I_{CEO}$	$V_{CE} = 60\text{ V}, R_{BE} = \infty$			10	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 5\text{ V}, I_C = 0$			10	$\mu\text{A}$
DC current gain	$h_{FE1}^{**}$	$V_{CE} = 1.5\text{ V}, I_C = 20\text{ mA}$	1,000			
DC current gain	$h_{FE2}^{**}$	$V_{CE} = 1.5\text{ V}, I_C = 100\text{ mA}$	1,500	7,000	30,000	
Collector saturation voltage	$V_{CE(sat)}^{**}$	$I_C = 100\text{ mA}, I_B = 0.2\text{ mA}$		0.8	1.5	V
Base saturation voltage	$V_{BE(sat)}^{**}$	$I_C = 100\text{ mA}, I_B = 0.2\text{ mA}$		1.4	2.0	V
Gain bandwidth product	$f_T$	$V_{CE} = 1.5\text{ V}, I_C = 20\text{ mA}$		45		MHz
Collector capacitance	$C_{ob}$	$V_{CB} = 10\text{ V}, I_E = 0, f = 1.0\text{ MHz}$		22		pF

\*\* Pulse test  $PW \leq 350\ \mu\text{s}$ , duty cycle  $\leq 2\%$

**TYPICAL CHARACTERISTICS (Ta = 25°C)**





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