

# 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

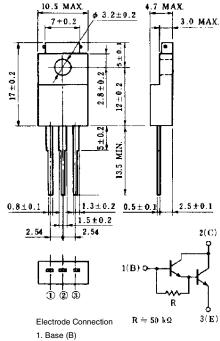
Please refer to "Quality Grades on NEC Semiconductor Devices" (Document No. C11531E) published by NEC Corporation to know the specification of quality grade on the devices and its recommended applications.

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

Parameter	Symbol	Ratings	Unit	
Collector to base voltage	V <sub>СВО</sub>	300	٧	
Collector to emitter voltage	VCEO	300	V	
Emitter to base voltage	V <sub>EBO</sub>	7	٧	
Collector current	Ic(DC)	300	mA	
Collector current	Ic(pulse)*	600	mA	
Base current	I <sub>B(DC)</sub>	30	mA	
Total power dissipation	P⊤ (Tc = 25°C)	25	W	
Total power dissipation	P⊤ (Ta = 25°C)	2.0	W	
Junction temperature	Tj	150	°C	
Storage temperature	Tstg	-55 to +150	°C	

<sup>\*</sup> PW  $\leq$  10 ms, duty cycle  $\leq$  50%

## PACKAGE DRAWING (UNIT: mm)



2. Collector (C)

3. Emitter (E)

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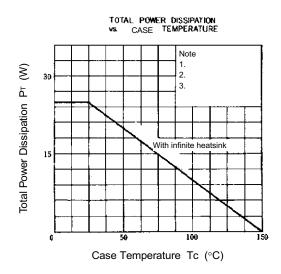


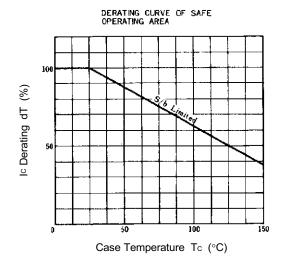
## **ELECTRICAL CHARACTERISTICS (Ta = 25°C)**

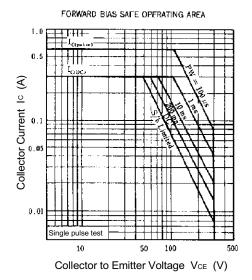
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	Ісво	V <sub>CB</sub> = 300 V, I <sub>E</sub> = 0			10	μΑ
Collector cutoff current	ICEO	Vce = 60 V, R <sub>BE</sub> = ∞			10	μΑ
Emitter cutoff current	ІЕВО	V <sub>EB</sub> = 5 V, I <sub>C</sub> = 0			10	μΑ
DC current gain	h <sub>FE1</sub> **	VcE = 1.5 V, Ic = 20 mA	1,000			
DC current gain	hFE2**	VcE = 1.5 V, Ic = 100 mA	1,500	7,000	30,000	
Collector saturation voltage	VcE(sat)**	Ic = 100 mA, I <sub>B</sub> = 0.2 mA		0.8	1.5	V
Base saturation voltage	V <sub>BE(sat)</sub> **	Ic = 100 mA, I <sub>B</sub> = 0.2 mA		1.4	2.0	V
Gain bandwidth product	f⊤	VcE = 1.5 V, Ic = 20 mA		45		MHz
Collector capacitance	Cob	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0, f = 1.0 MHz		22		pF

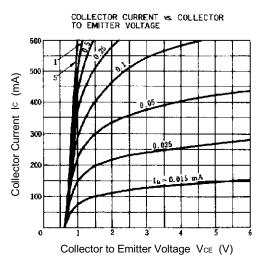
<sup>\*\*</sup> Pulse test PW  $\leq$  350  $\mu$ s, duty cycle  $\leq$  2%

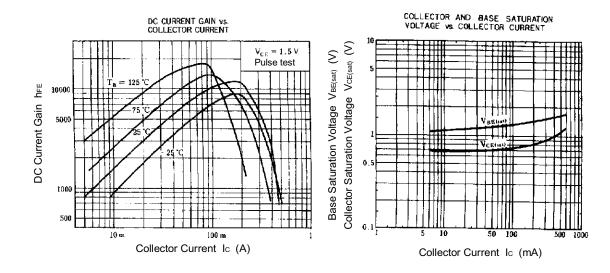
## TYPICAL CHARACTERISTICS (Ta = 25°C)

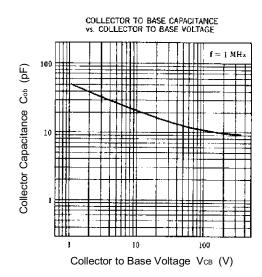












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