

NPN SILICON EPITAXIAL TRANSISTOR FOR LOW-FREQUENCY POWER AMPLIFIERS AND MID-SPEED SWITCHING

The 2SD2425 is a transistor featuring high current capacitance in small dimension. This transistor is ideal for DC/DC converters and motor drivers.

FEATURES

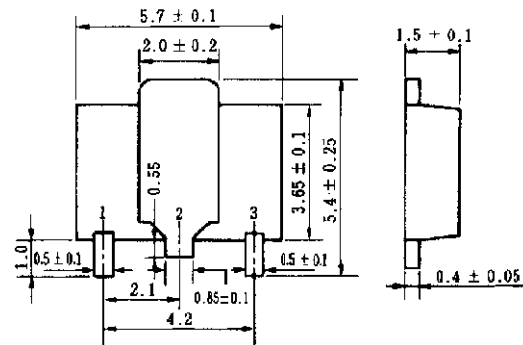
- New package with dimensions in between those of small signal and power signal package
- High current capacitance
- Low collector saturation voltage
- Complementary transistor with 2SB1578

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.

PACKAGE DRAWING (UNIT: mm)



Electrode connection

1. Emitter
2. Collector
3. Base

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

Parameter	Symbol	Conditions	Ratings	Unit
Collector to base voltage	V_{CBO}		60	V
Collector to emitter voltage	V_{CEO}		60	V
Emitter to base voltage	V_{EBO}		6.0	V
Collector current (DC)	$I_{C(DC)}$		5.0	A
Collector current (pulse)	$I_{C(pulse)}$	PW ≤ 10 ms, duty cycle ≤ 50 %	7.0	A
Base current (DC)	$I_{B(DC)}$		1.0	A
Total power dissipation	P_T	7.5 cm ² × 0.7 mm ceramic board mounted	2.0	W
Junction temperature	T_j		150	°C
Storage temperature	T_{stg}		-55 to +150	°C

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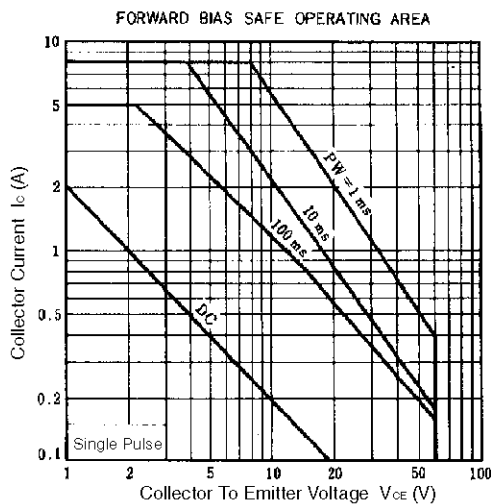
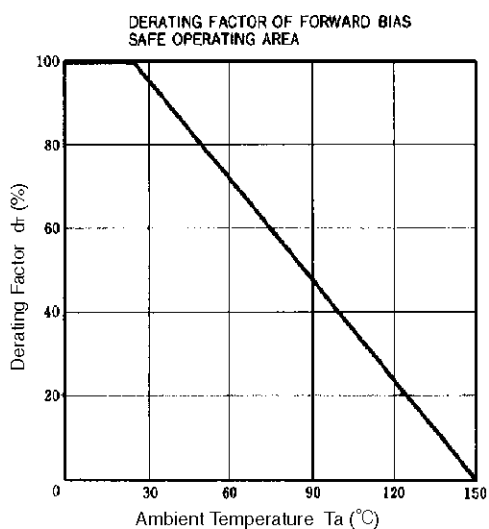
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

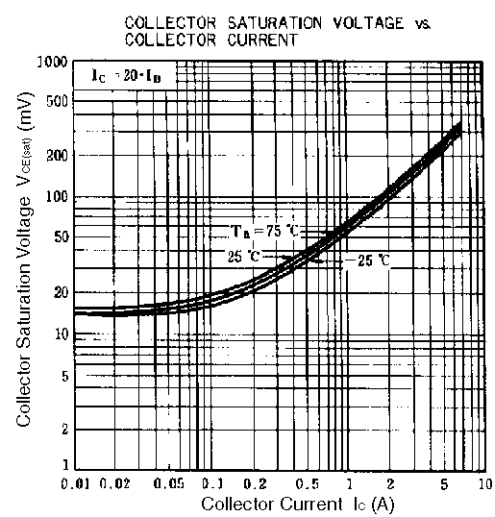
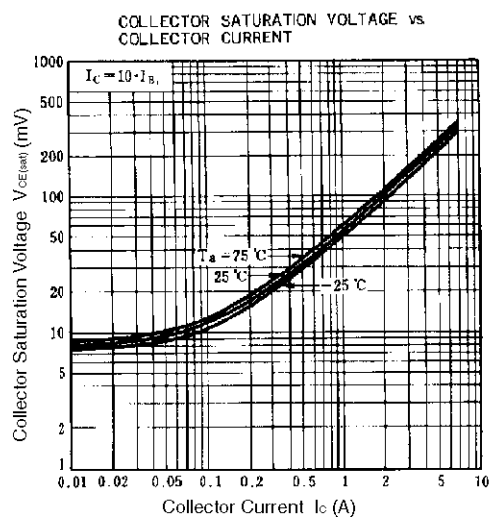
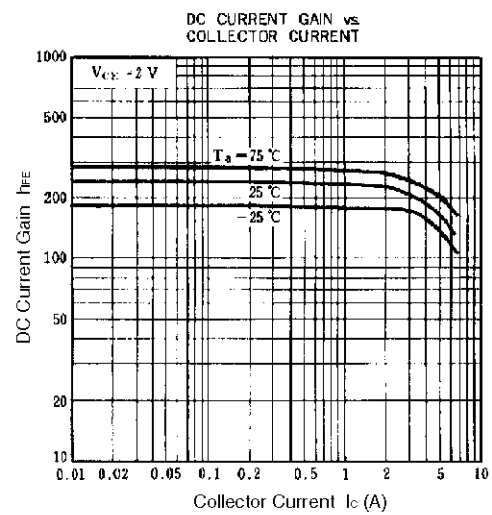
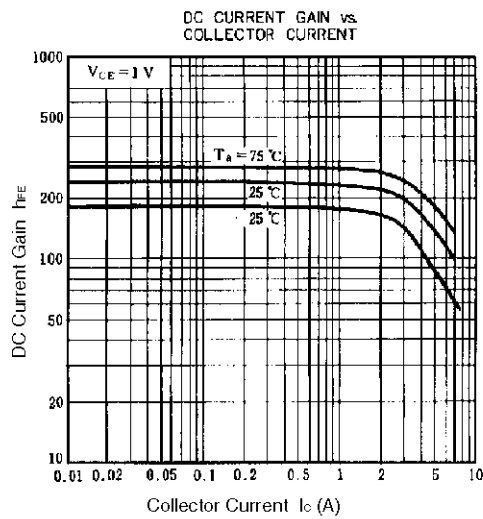
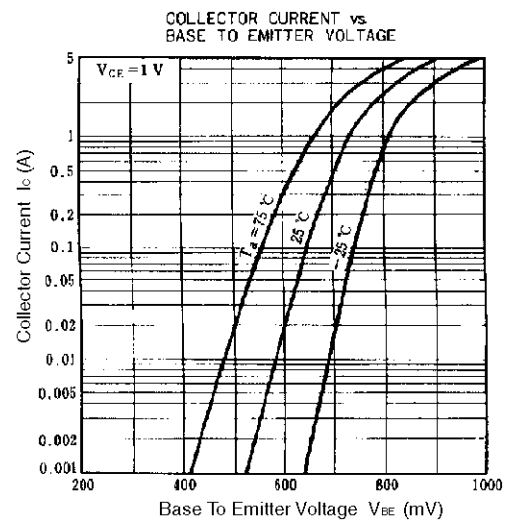
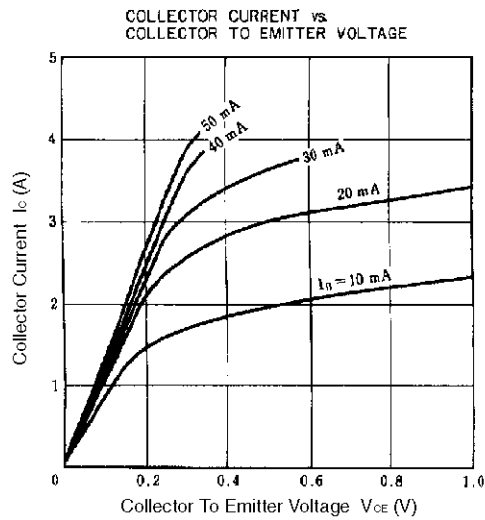
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 50\text{ V}, I_E = 0$			10	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 6.0\text{ V}, I_C = 0$			10	μA
DC current gain	h_{FE1}	$V_{CE} = 1.0\text{ V}, I_C = 0.1\text{ A}$	60	180		—
DC current gain	h_{FE2}	$V_{CE} = 1.0\text{ V}, I_C = 2.0\text{ A}$	100	200	400	—
DC current gain	h_{FE3}	$V_{CE} = 2.0\text{ V}, I_C = 5.0\text{ A}$	50	150		—
Collector saturation voltage	$V_{CE(sat)}$	$I_C = 2.0\text{ A}, I_B = 0.2\text{ A}$		90	300	mV
Base saturation voltage	$V_{BE(sat)}$	$I_C = 2.0\text{ A}, I_B = 0.2\text{ A}$		0.9	1.2	V
Turn-on time	t_{on}	$I_C = 2.0\text{ A}, V_{CC} = 10\text{ V}$ $I_{B1} = -I_{B2} = 0.2\text{ A}$ $R_L = 5.0\ \Omega$		0.6		μs
Storage time	t_{stg}			0.8		μs
Fall time	t_f			0.08		μs

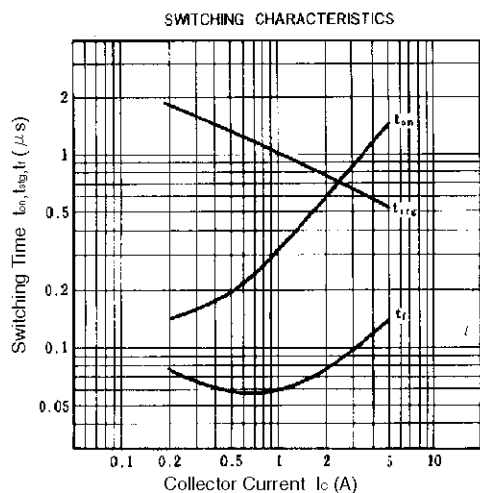
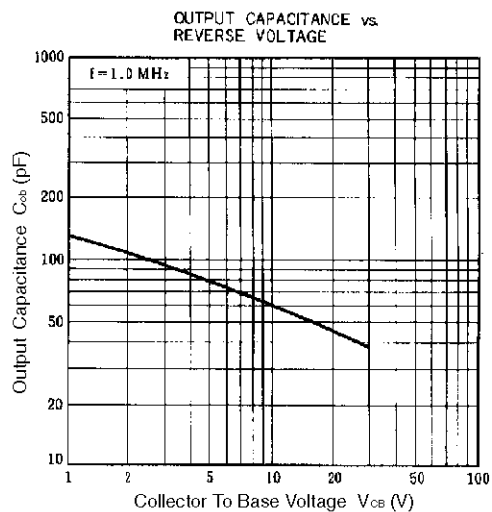
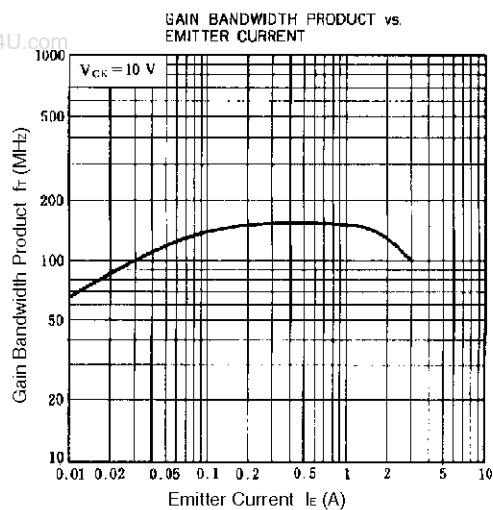
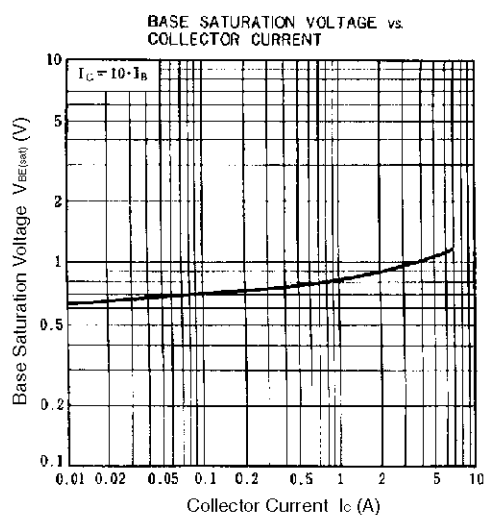
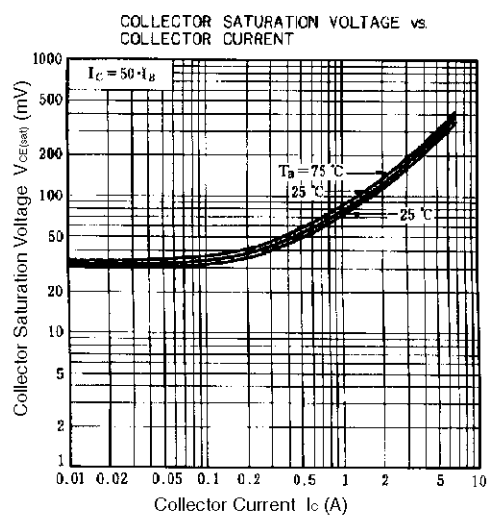
h_{FE} CLASSIFICATION

Marking	AB1	AB2	AB3
h_{FE2}	100 to 200	160 to 320	200 to 400

TYPICAL CHARACTERISTICS (Ta = 25°C)







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