2SC4278 Transistor, NPN

Features

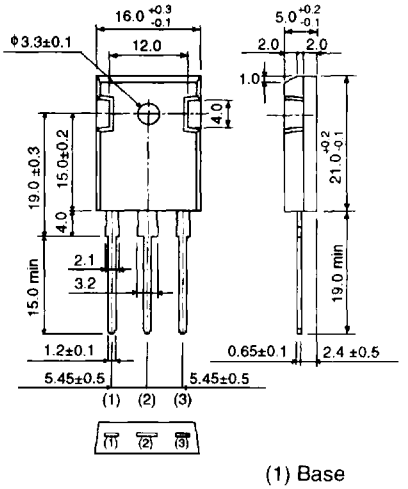
- available in TO-247 package
- high collector breakdown voltage, typically BV_{CEO} = 150 V
- low collector saturation voltage, typically $V_{CE(sat)}$ = 0.3 V at I_C/I_B = 7 A/0.7 A
- large collector power dissipation P_C = 100 W at T_C = 25°C
- wide safe operating area (SOA)
- complementary pair with 2SA1633

Applications

- low frequency power amplifier

Dimensions (Units : mm)

2SC4278 (TO-247)



(1) Base
(2) Collector
(3) Emitter

Absolute maximum ratings (T_a = 25°C)

Parameter	Symbol	Limits	Unit	Conditions
Collector-to-base voltage	V_{CBO}	150	V	
Collector-to-emitter voltage	V_{CEO}	150	V	
Emitter-to-base voltage	V_{EBO}	5	V	
Collector current	I_C	10	A	Continuous (dc)
		20	A	Single pulse, P_W = 100 ms
Collector dissipation	P_C	100	W	T_C = 25°C
Junction temperature	T_j	150	°C	
Storage temperature	T_{stg}	−55 ~ +150	°C	

Electrical characteristics (unless otherwise noted, T_a = 25°C)

Parameter	Symbol	Min	Typical	Max	Unit	Conditions
Collector-to-base breakdown voltage	BV_{CBO}	150			V	I_C = 50 µA
Collector-to-emitter breakdown voltage	BV_{CEO}	150			V	I_C = 50 mA
Emitter-to-base breakdown voltage	BV_{EBO}	5			V	I_E = 50 µA
Collector cutoff current	I_{CBO}			5	µA	V_{CB} = 150 V
Emitter cutoff current	I_{EBO}			5	µA	V_{EB} = 5 V
DC current gain	h_{FE1}	60		320		V_{CE} = 5 V, I_C = 1 A, single pulse
	h_{FE2}	35				V_{CE} = 5 V, I_C = 5 A, single pulse
Collector-to-emitter saturation voltage	$V_{CE(sat)}$		0.3	1.0	V	I_C /I_B = 7 A/0.7 A, single pulse
Base-to-emitter voltage	V_{BE}		0.95	1.5	V	V_{CE} = 5 V, I_C = 5 A, single pulse
Transition frequency	f_T		20		MHz	V_{CE} = 5 V, I_E = –1 A, f = 10 MHz, single pulse
Output capacitance	C_{ob}		200		pF	V_{CB} = 10 V, I_E = 0 A, f = 1 MHz

h_{FE} rankings

Item	D	E	F
h_{FE}	60 ~ 120	100 ~ 120	160 ~ 320

Electrical characteristic curves

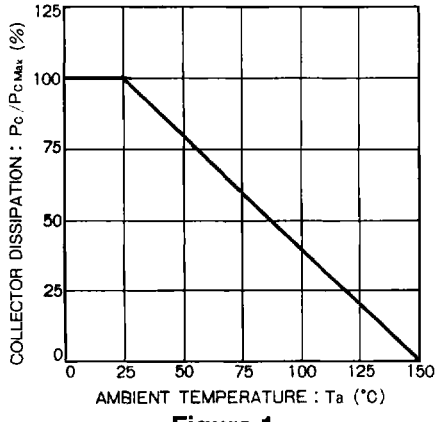


Figure 1

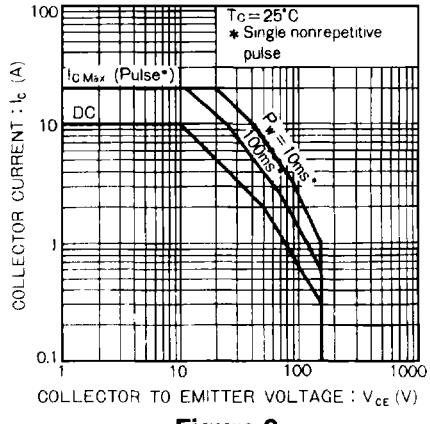


Figure 2

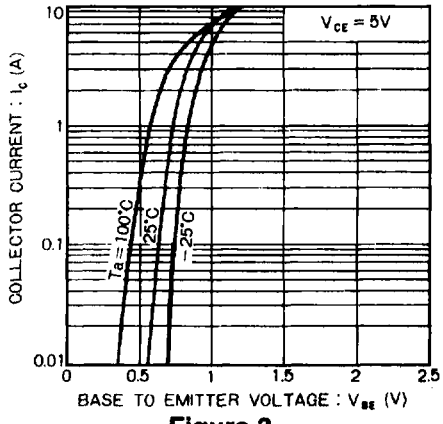


Figure 3

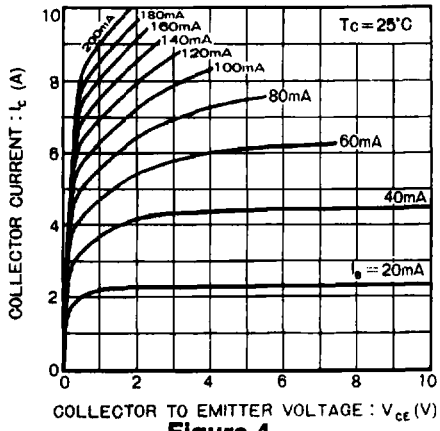


Figure 4

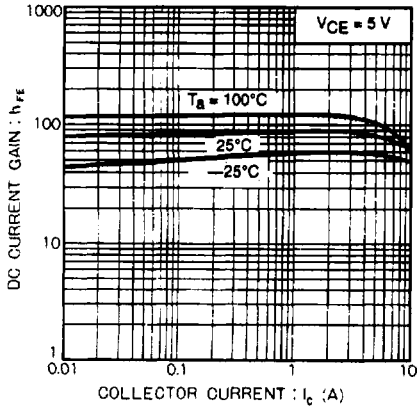


Figure 5

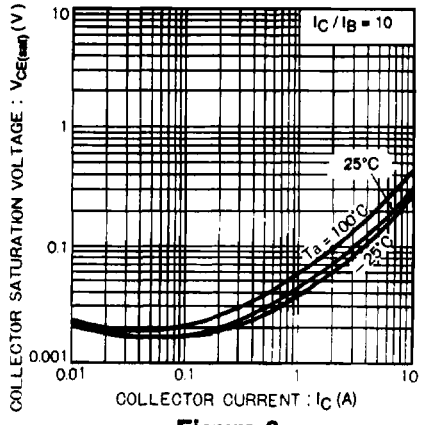


Figure 6

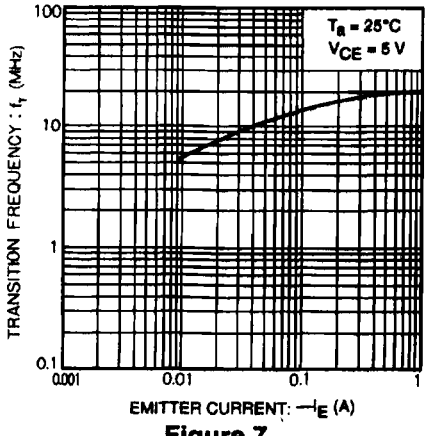


Figure 7

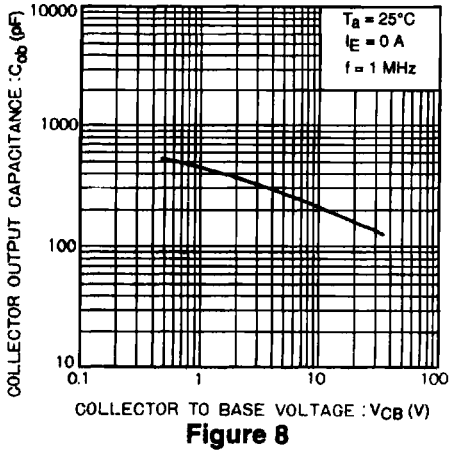


Figure 8

Ordering information

Package	Bulk
Code	
Basic order quantity	500
2SC4278	☆
★ = Standard, ☆ = Semi-standard, ✳ = Special order	