2SB0942AP Datasheet

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DiGi Electronics Part Number	2SB0942AP-DG
Manufacturer	Panasonic Electronic Components
Manufacturer Product Number	2SB0942AP
Description	TRANS PNP 80V 4A TO220F-A1
Detailed Description	Bipolar (BJT) Transistor PNP 80 V 4 A 30MHz 2 W Through Hole TO-220F-A1

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Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
2SB0942AP	Panasonic Electronic Components
Series:	Product Status:
-	Obsolete
Transistor Type:	Current - Collector (Ic) (Max):
PNP	4 A
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
80 V	1.5V @ 400mA, 4A
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
700µA	120 @ 1A, 4V
Power - Max:	Frequency - Transition:
2 W	30MHz
Operating Temperature:	Mounting Type:
150°C (TJ)	Through Hole
Package / Case:	Supplier Device Package:
TO-220-3 Full Pack	TO-220F-A1
Base Product Number:	
2SB094	

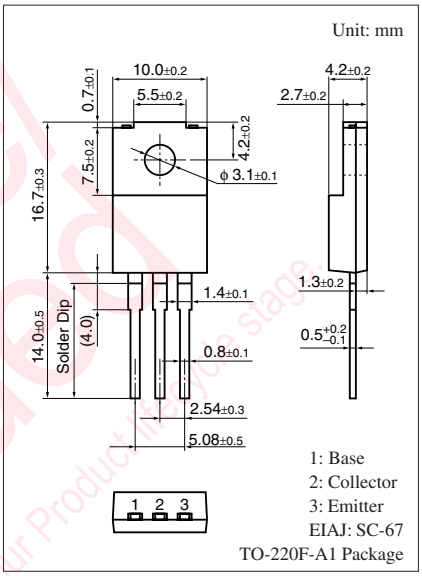
Environmental & Export classification

Moisture Sensitivity Level (MSL):	ECCN:
1 (Unlimited)	EAR99
HTSUS:	
8541.29.0075	

2SB0942 (2SB942), 2SB0942A (2SB942A)

Silicon PNP epitaxial planar type

For low-frequency power amplification
Complementary to 2SD1267, 2SD1267A



■ Features

- High forward current transfer ratio h_{FE} which has satisfactory linearity
- Large collector-emitter saturation voltage $V_{CE(sat)}$
- Full-pack package which can be installed to the heat sink with one screw

■ Absolute Maximum Ratings $T_C = 25°C$

Parameter		Symbol	Rating	Unit
Collector-base voltage (Emitter open)	2SB0942	V_{CBO}	−60	V
	2SB0942A		−80	
Collector-emitter voltage (Base open)	2SB0942	V_{CEO}	−60	V
	2SB0942A		−80	
Emitter-base voltage (Collector open)		V_{EBO}	−5	V
Collector current		I_C	−4	A
Peak collector current		I_{CP}	−8	A
Collector power dissipation		P_C	40	W
	$T_a = 25°C$		2	
Junction temperature		T_j	150	°C
Storage temperature		T_{stg}	−55 to +150	°C

■ Electrical Characteristics $T_C = 25°C \pm 3°C$

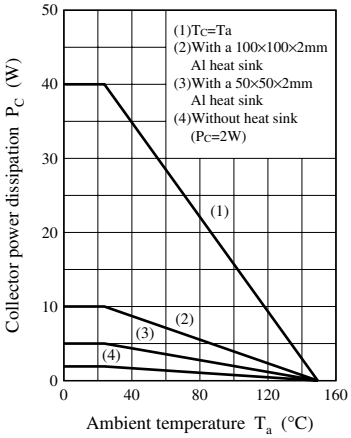
Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	2SB0942	V_{CEO}	$I_C = -30$ mA, $I_B = 0$	−60			V
	2SB0942A			−80			
Base-emitter voltage		V_{BE}	$V_{CE} = -4$ V, $I_C = -3$ A			−2	V
Collector-emitter cutoff current (E-B short)	2SB0942	I_{CES}	$V_{CE} = -60$ V, $V_{BE} = 0$			−400	μA
	2SB0942A		$V_{CE} = -80$ V, $V_{BE} = 0$			−400	
Collector-emitter cutoff current (Base open)		I_{CEO}	$V_{CE} = -30$ V, $I_B = 0$			−700	μA
Emitter-base cutoff current (Collector open)		I_{EBO}	$V_{EB} = -5$ V, $I_C = 0$			−1	mA
Forward current transfer ratio		h_{FE1} *	$V_{CE} = -4$ V, $I_C = -1$ A	40		250	—
		h_{FE2}	$V_{CE} = -4$ V, $I_C = -3$ A	15			
Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_C = -4$ A, $I_B = -0.4$ A			−1.5	V
Transition frequency		f_T	$V_{CE} = -10$ V, $I_C = -0.1$ A, f = 10 MHz		30		MHz
Turn-on time		t_{on}	$I_C = -4$ A, $I_{B1} = -0.4$ A, $I_{B2} = 0.4$ A		0.2		μs
Storage time		t_{stg}	$V_{CC} = -50$ V		0.5		μs
Fall time		t_f			0.2		μs

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. *: Rank classification

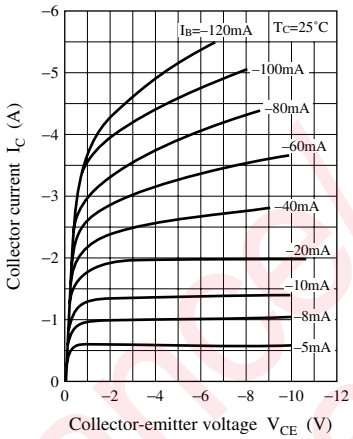
Rank	R	Q	P
h_{FE1}	40 to 90	70 to 150	120 to 250

Note) The part numbers in the parenthesis show conventional part number.

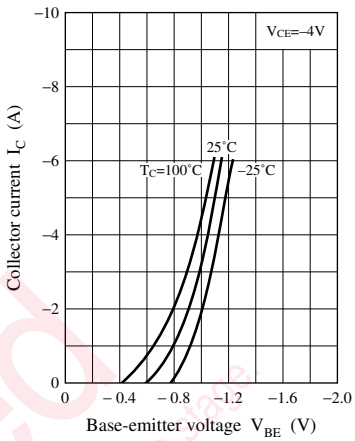
P_C — T_a



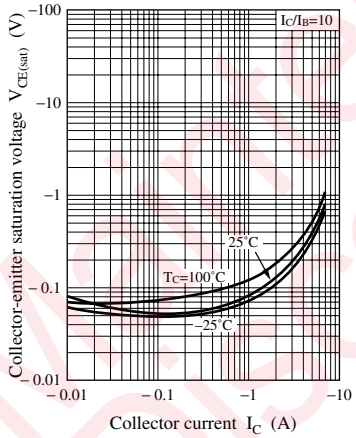
I_C — V_{CE}



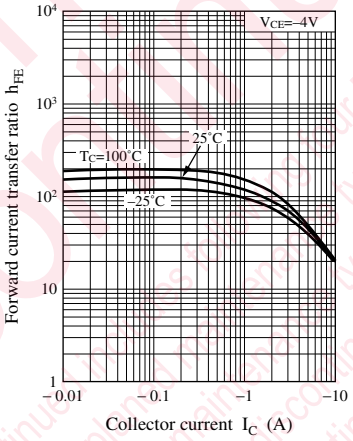
I_C — V_{BE}



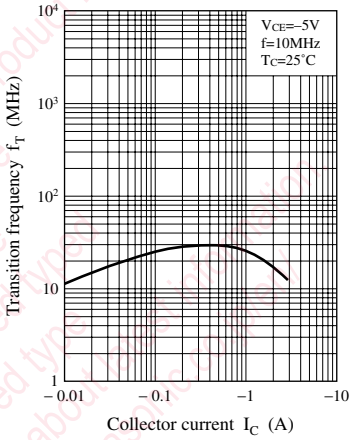
$V_{CE(sat)}$ — I_C



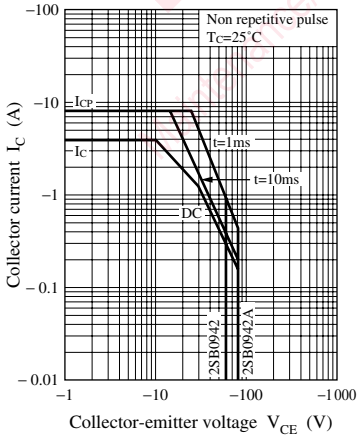
h_{FE} — I_C



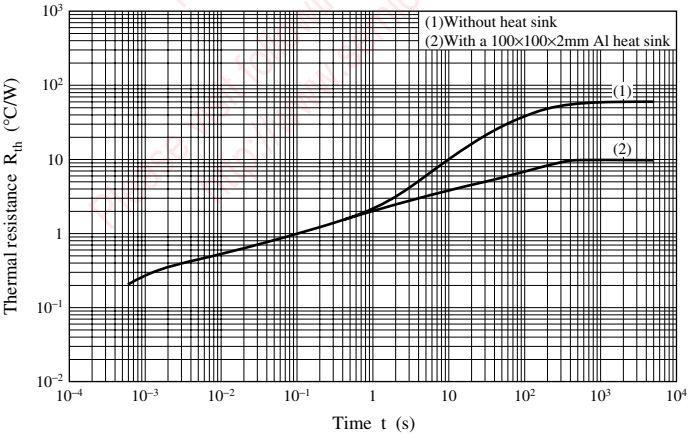
f_T — I_C



Safe operation area



R_{th} — t



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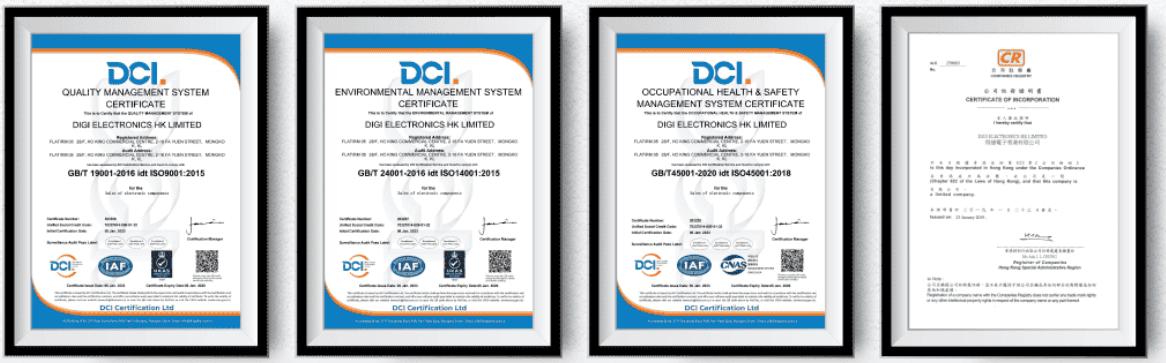

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