2SD1938FSL Datasheet

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DiGi Electronics Part Number	2SD1938FSL-DG
Manufacturer	Panasonic Electronic Components
Manufacturer Product Number	2SD1938FSL
Description	TRANS NPN 20V 0.3A MINI3
Detailed Description	Bipolar (BJT) Transistor NPN 20 V 300 mA 80MHz 200 mW Surface Mount Mini3-G1

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RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
2SD1938FSL	Panasonic Electronic Components
Series:	Product Status:
-	Obsolete
Transistor Type:	Current - Collector (Ic) (Max):
NPN	300 mA
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
20 V	100mV @ 3mA, 30mA
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
100nA (ICBO)	500 @ 4mA, 2V
Power - Max:	Frequency - Transition:
200 mW	80MHz
Operating Temperature:	Mounting Type:
150°C (TJ)	Surface Mount
Package / Case:	Supplier Device Package:
TO-236-3, SC-59, SOT-23-3	Mini3-G1
Base Product Number:	
2SD1938	

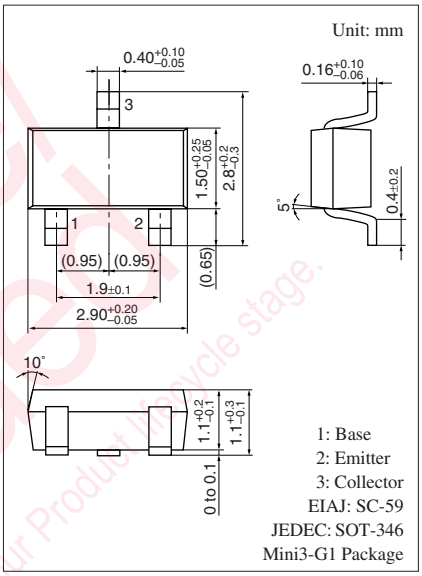
Environmental & Export classification

Moisture Sensitivity Level (MSL):	ECCN:
1 (Unlimited)	EAR99
HTSUS:	
8541.21.0095	

2SD1938(F)

Silicon NPN epitaxial planar type

For low-voltage output amplification
For muting
For DC-DC converter



Marking symbol: 3W

■ Features

- Low ON resistance R_{on}
- High forward current transfer ratio h_{FE}
- Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	50	V
Collector-emitter voltage (Base open)	V_{CEO}	20	V
Emitter-base voltage (Collector open)	V_{EBO}	25	V
Collector current	I_C	300	mA
Peak collector current	I_{CP}	500	mA
Collector power dissipation	P_C	200	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	V_{CEO}	I_C = 1 mA, I_B = 0	20			V
Base-emitter voltage	V_{BE}	V_{CE} = 2 V, I_C = 4 mA		0.6		V
Collector-base cutoff current (Emitter open)	I_{CBO}	V_{CB} = 50 V, I_E = 0			0.1	µA
Emitter-base cutoff current (Collector open)	I_{EBO}	V_{EB} = 25 V, I_C = 0			0.1	µA
Forward current transfer ratio *1	h_{FE}	V_{CE} = 2 V, I_C = 4 mA	500		2 500	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 30 mA, I_B = 3 mA			0.1	V
Transition frequency	f_T	V_{CB} = 6 V, I_E = −4 mA, f = 200 MHz		80		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	V_{CB} = 10 V, I_E = 0, f = 1 MHz			7	pF
ON resistance *2	R_{on}			1.0		Ω

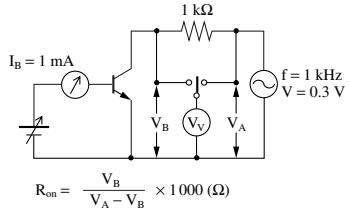
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. *1: Rank classification

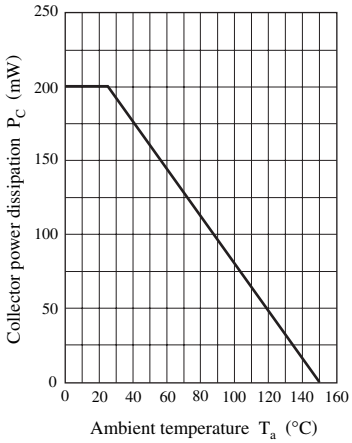
Rank	S	T	No rank
h_{FE}	500 to 1 500	800 to 2 500	500 to 2 500

Product of no-rank classification is not marked.

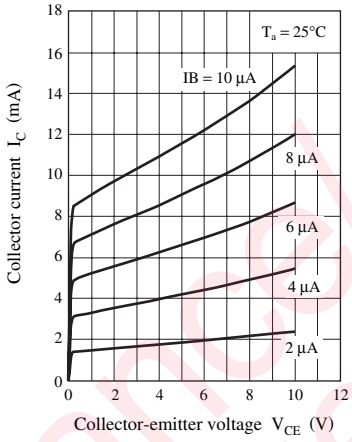
*2: R_{on} Measuremet circuit



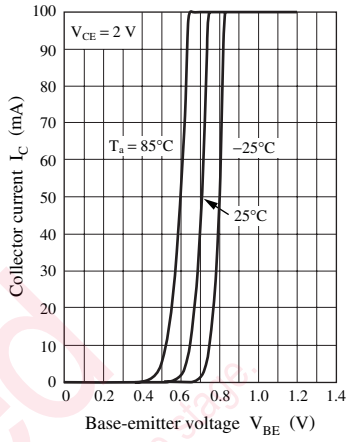
P_C — T_a



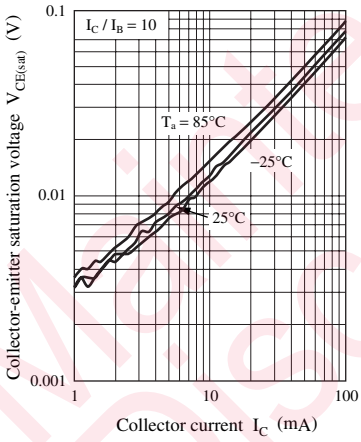
I_C — V_{CE}



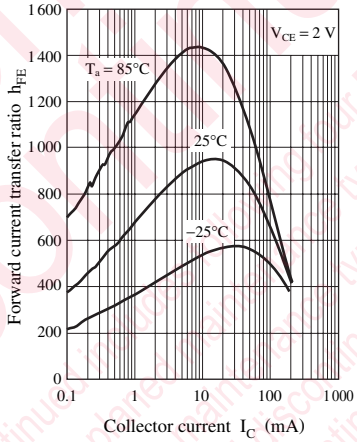
I_C — V_{BE}



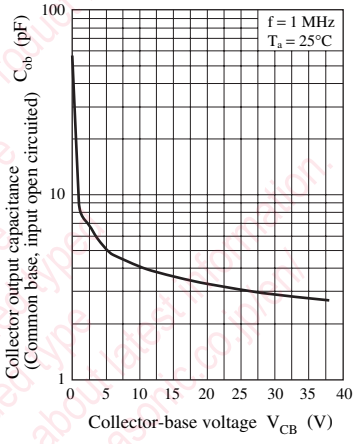
$V_{CE(sat)}$ — I_C



h_{FE} — I_C



C_{ob} — V_{CB}



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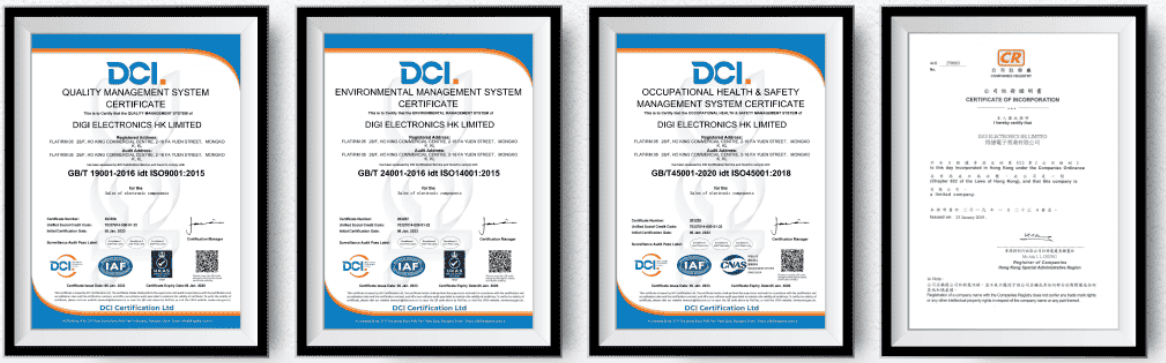

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