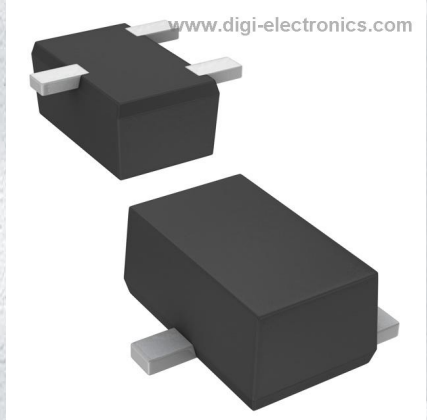
2SA17390RL Datasheet



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DiGi Electronics Part Number	2SA17390RL-DG
Manufacturer	Panasonic Electronic Components
Manufacturer Product Number	2SA17390RL
Description	TRANS PNP 15V 0.05A SMINI3
Detailed Description	Bipolar (BJT) Transistor PNP 15 V 50 mA 1.5GHz 150 mW Surface Mount SMini3-G1

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
2SA17390RL	Panasonic Electronic Components
Series:	Product Status:
-	Obsolete
Transistor Type:	Current - Collector (Ic) (Max):
PNP	50 mA
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
15 V	200mV @ 1mA, 10mA
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
100nA (ICBO)	90 @ 10mA, 1V
Power - Max:	Frequency - Transition:
150 mW	1.5GHz
Operating Temperature:	Mounting Type:
150°C (TJ)	Surface Mount
Package / Case:	Supplier Device Package:
SC-70, SOT-323	SMini3-G1
Base Product Number:	
2SA1739	

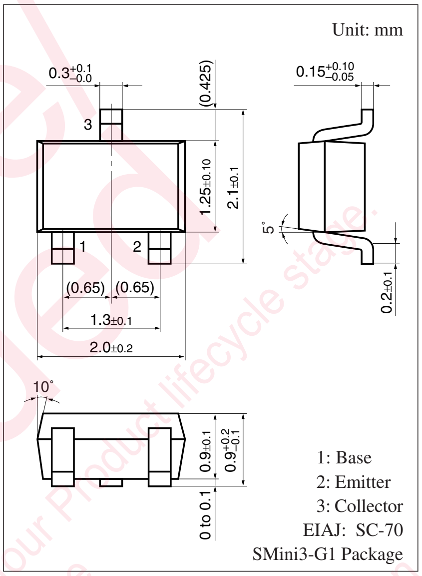
Environmental & Export classification

Moisture Sensitivity Level (MSL):	ECCN:
1 (Unlimited)	EAR99
HTSUS:	
8541.21.0075	

2SA1739

Silicon PNP epitaxial planar type

For high speed switching
Complementary to 2SC3938



Marking Symbol: AX

■ Features

- High speed switching
- Low collector-emitter saturation voltage $V_{CE(sat)}$
- S-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}	−15	V
Collector-emitter voltage (Base open)	V_{CEO}	−15	V
Emitter-base voltage (Collector open)	V_{EBO}	−4	V
Collector current	I_C	−50	mA
Peak collector current	I_{CP}	−100	mA
Collector power dissipation	P_C	150	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

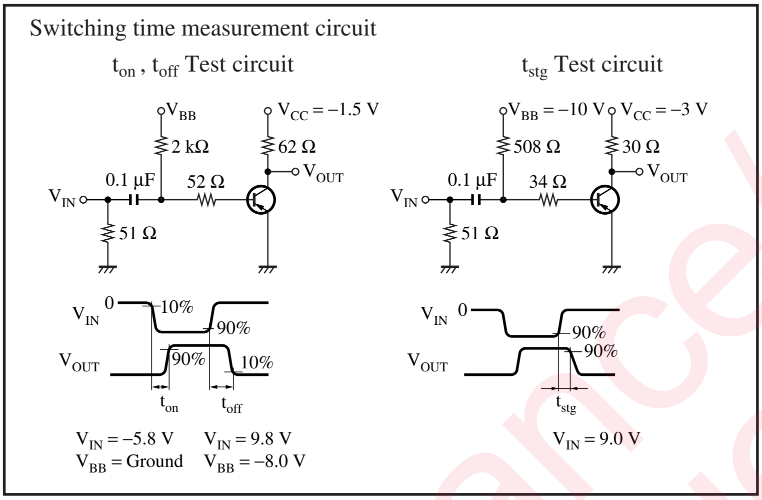
■ Electrical Characteristics $T_a = 25°C \pm 3°C$

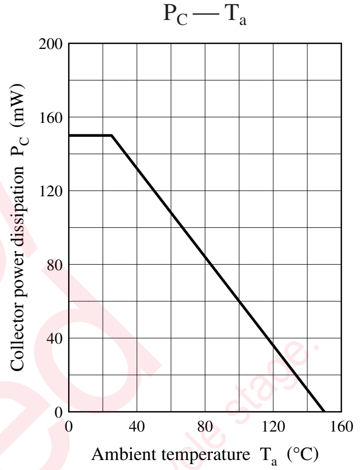
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = -8$ V, $I_E = 0$			− 0.1	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{CE} = -3$ V, $I_C = 0$			− 0.1	μA
Forward current transfer ratio	h_{FE1} *	$V_{CE} = -1$ V, $I_C = -10$ mA	50		150	—
	h_{FE2}	$V_{CE} = -1$ V, $I_C = -1$ mA	30			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -10$ mA, $I_B = -1$ mA		− 0.1	− 0.2	V
Transition frequency	f_T	$V_{CB} = -10$ V, $I_E = 10$ mA, f = 200 MHz	800	1 500		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = -5$ V, $I_E = 0$, f = 1 MHz		1		pF
Turn-on time	t_{on}	Refer to the switching time measurement circuit		12		ns
Turn-off time	t_{off}			20		ns
Storage time	t_{stg}			19		ns

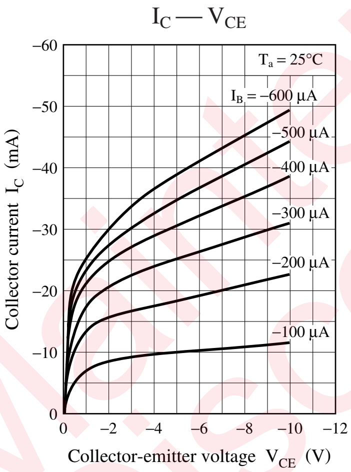
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. *: Rank classification

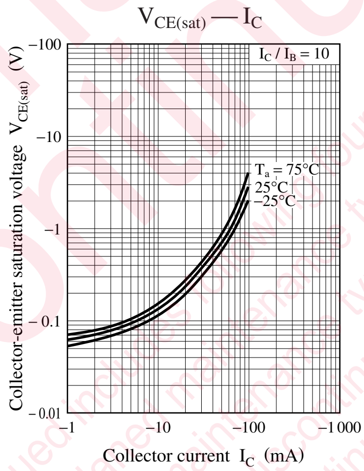
Rank	Q	R	No-rank
h_{FE1}	50 to 120	90 to 150	50 to 150
Marking symbol	AXQ	AXR	AX

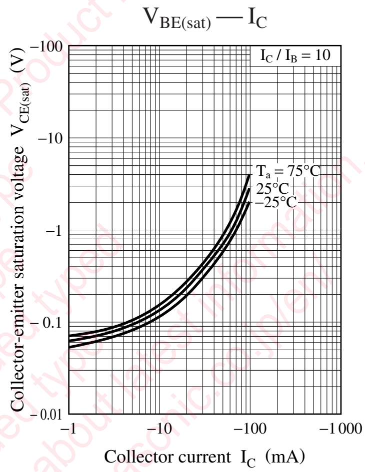
Product of no-rank is not classified and have no marking symbol for rank.

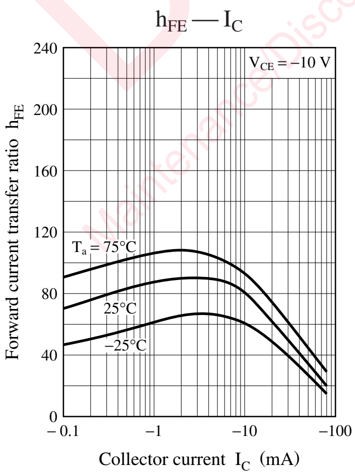

Switching time measurement circuit
t_{on} , t_{off} Test circuit
t_{stg} Test circuit
V_{BB}
V_{CC} = −1.5 V
2 kΩ
62 Ω
V_{OUT}
0.1 µF
52 Ω
V_{IN}
51 Ω
V_{BB} = −10 V
V_{CC} = −3 V
508 Ω
30 Ω
34 Ω
10%
90%
t_{on}
t_{off}
t_{stg}
V_{IN} = −5.8 V V_{BB} = Ground
V_{IN} = 9.8 V V_{BB} = −8.0 V
V_{IN} = 9.0 V

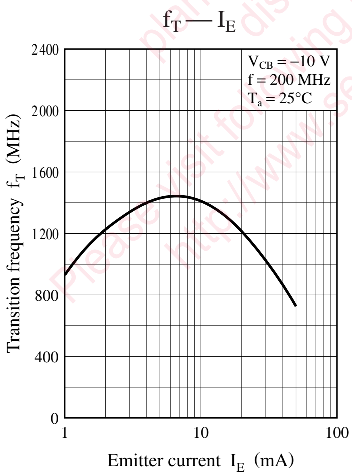

P_C — T_a
Collector power dissipation P_C (mW)
Ambient temperature T_a (°C)

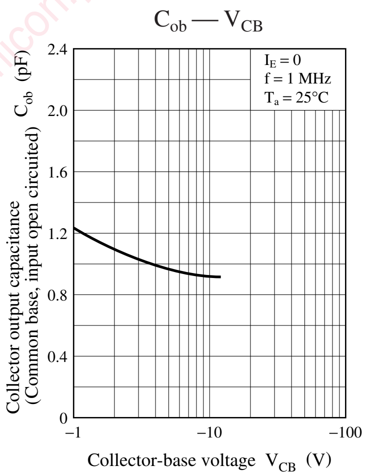

I_C — V_{CE}
T_a = 25°C
I_B = −600 µA
−500 µA
−400 µA
−300 µA
−200 µA
−100 µA
Collector current I_C (mA)
Collector-emitter voltage V_{CE} (V)


$V_{CE(sat)}$ — I_C
I_C / I_B = 10
T_a = 75°C
25°C
−25°C
Collector-emitter saturation voltage $V_{CE(sat)}$ (V)
Collector current I_C (mA)


$V_{BE(sat)}$ — I_C
I_C / I_B = 10
T_a = 75°C
25°C
−25°C
Collector-emitter saturation voltage $V_{CE(sat)}$ (V)
Collector current I_C (mA)


h_{FE} — I_C
V_{CE} = −10 V
T_a = 75°C
25°C
−25°C
Forward current transfer ratio h_{FE}
Collector current I_C (mA)


f_T — I_E
V_{CB} = −10 V
f = 200 MHz
T_a = 25°C
Transition frequency f_T (MHz)
Emitter current I_E (mA)


C_{ob} — V_{CB}
I_E = 0
f = 1 MHz
T_a = 25°C
Collector output capacitance (Common base, input open circuited) C_{ob} (pF)
Collector-base voltage V_{CB} (V)

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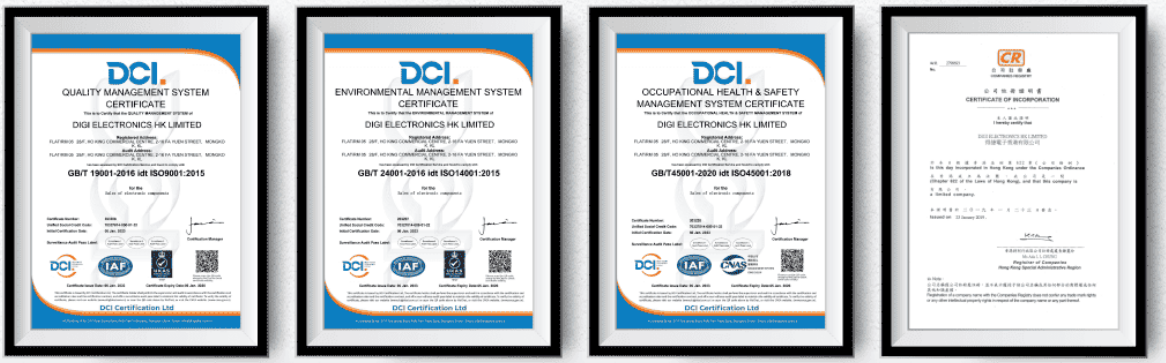

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