

# Medium Power Transistor (50V,0.5A)

## 2SC1741AS

### ● Features

- 1) High current.( $I_C=5A$ )
- 2) Low saturation voltage, typically  $V_{CE(sat)}=0.1V$  at  $I_C / I_B=150mA / 15mA$ .

### ● Packaging specifications and $h_{FE}$

Type	2SC1741AS
Package	SPT
$h_{FE}$	QR
Marking	—
Code	TP
Basic ordering unit (pieces)	5000

### ● Absolute maximum ratings ( $T_a=25^\circ C$ )

Parameter	Symbol	Limits	Unit
Collector-base voltage	$V_{CBO}$	50	V
Collector-emitter voltage	$V_{CEO}$	50	V
Emitter-base voltage	$V_{EBO}$	5	V
Collector current	$I_C$	0.5	A
Collector power dissipation	$P_C$	0.3	W
Junction temperature	$T_J$	150	$^\circ C$
Storage temperature	$T_{stg}$	—55 to +150	$^\circ C$

### ● Electrical characteristics ( $T_a=25^\circ C$ )

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	$BV_{CBO}$	50	—	—	V	$I_C=100\mu A$
Collector-emitter breakdown voltage	$BV_{CEO}$	50	—	—	V	$I_C=1mA$
Emitter-base breakdown voltage	$BV_{EBO}$	5	—	—	V	$I_E=100\mu A$
Collector cutoff current	$I_{CBO}$	—	—	0.5	$\mu A$	$V_{CB}=30V$
Emitter cutoff current	$I_{EBO}$	—	—	0.5	$\mu A$	$V_{EB}=4V$
DC current transfer ratio	$h_{FE}$	120	—	390	—	$V_{CE}/I_C=3V/0.1A$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.4	V	$I_C/I_B=150mA/15mA$
Transition frequency	$f_T$	—	250	—	MHz	$V_{CE}=5V$ , $I_E=-20mA$ , $f=100MHz$
Output capacitance	$C_{ob}$	—	6.5	—	pF	$V_{CB}=10V$ , $I_E=0A$ , $f=1MHz$

## Transistors

## ● Electrical characteristic curves

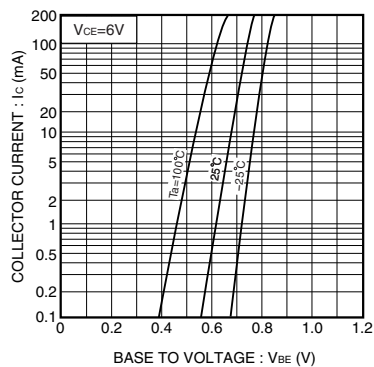


Fig.1 Ground emitter propagation characteristics

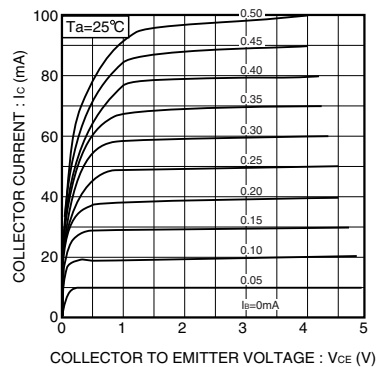


Fig.2 Ground emitter output characteristics

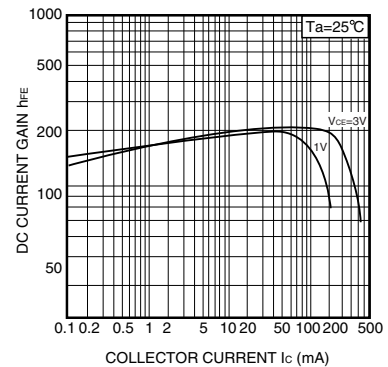


Fig.3 DC current gain vs. Collector current (I)

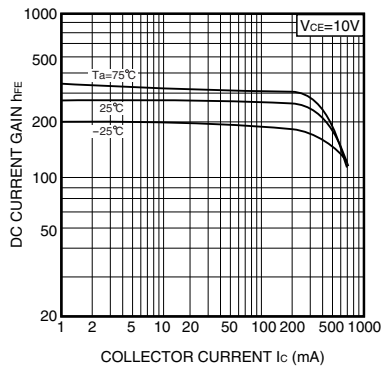


Fig.4 DC current gain vs. Collector current (II)

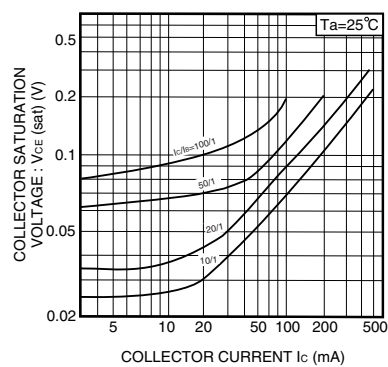


Fig.5 Collector-emitter saturation voltage vs. Collector current

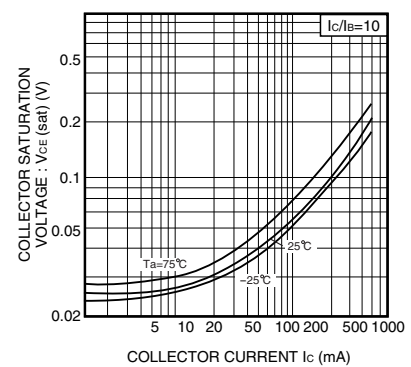


Fig.6 Collector-emitter saturation voltage vs. collector current

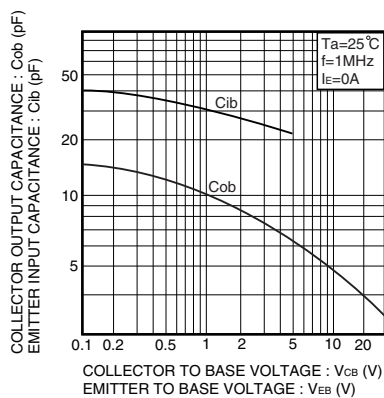


Fig.7 Input-and-output capacity vs.voltage characteristic

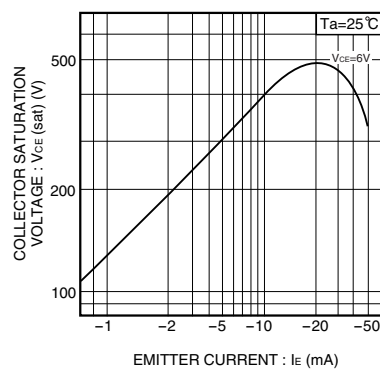


Fig.8 Transition frequency vs.emitter current

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