

Medium Power Transistor (−60V, −2A)

2SB1561

●Features

- 1) Low saturation voltage, typically $V_{CE(sat)} = -0.15V$ at $I_C / I_E = -1A / -50mA$.
- 2) Collector-emitter voltage = $-60V$
- 3) $P_C = 2W$
(on $40 \times 40 \times 0.7$ mm ceramic board).
- 4) Complements the 2SD2391.

●Packaging specifications and h_{FE}

Type	2SB1561
Package	MPT3
h_{FE}	Q
Marking	BL*
Code	T100
Basic ordering unit (pieces)	1000

* Denotes h_{FE}

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

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	−60	V
Collector-emitter voltage	V_{CEO}	−60	V
Emitter-base voltage	V_{EBO}	−6	V
Collector current	I_C	−2	A
	I_{CP}	−5	A *1
Collector power dissipation	P_C	0.5	W *2
		2	
Junction temperature	T_J	150	$^\circ C$
Storage temperature	T_{stg}	−55~+150	$^\circ C$

*1 Single pulse, $P_w = 10ms$

*2 When mounted on a $40 \times 40 \times 0.7$ mm ceramic board.

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	−60	—	—	V	$I_C = -50 \mu A$
Collector-emitter breakdown voltage	BV_{CEO}	−60	—	—	V	$I_C = -1mA$
Emitter-base breakdown voltage	BV_{EBO}	−6	—	—	V	$I_E = -50 \mu A$
Collector cutoff current	I_{CBO}	—	—	−0.1	μA	$V_{CB} = -50V$
Emitter cutoff current	I_{EBO}	—	—	−0.1	μA	$V_{EB} = -5V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	−0.15	−0.35	V	$I_C / I_E = -1A / -50mA$ *
DC current transfer ratio	h_{FE}	120	—	270	—	$V_{CE} / I_C = -2V / -0.5A$
Transition frequency	f_T	—	200	—	MHz	$V_{CE} = -2V, I_E = 0.5A, f = 100MHz$ *
Output capacitance	C_{ob}	—	23	—	pF	$V_{CB} = -10V, I_E = 0A, f = 1MHz$

* Measured using pulse current

(94S-191-B228)

Medium Power Transistor (60V, 2A)

2SD2391

●Features

- 1) Low saturation voltage, typically $V_{CE(sat)} = 0.13V$ at $I_C / I_E = 1A / 50mA$.
- 2) Collector-emitter voltage = $60V$
- 3) $P_C = 2W$
(on $40 \times 40 \times 0.7$ mm ceramic board).
- 4) Complements the 2SB1561.

●Packaging specifications and h_{FE}

Type	2SD2391
Package	MPT3
h_{FE}	Q
Marking	DT*
Code	T100
Basic ordering unit (pieces)	1000

* Denotes h_{FE}

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

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	60	V
Collector-emitter voltage	V_{CEO}	60	V
Emitter-base voltage	V_{EBO}	6	V
Collector current	I_C	2	A
		6	A *1
Collector power dissipation	P_C	0.5	W *2
		2	
Junction temperature	T_J	150	$^\circ C$
Storage temperature	T_{stg}	−55~+150	$^\circ C$

*1 Single pulse, $P_w = 10ms$

*2 When mounted on a $40 \times 40 \times 0.7$ mm ceramic board.

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	60	—	—	V	$I_C = 50 \mu A$
Collector-emitter breakdown voltage	BV_{CEO}	60	—	—	V	$I_C = 1mA$
Emitter-base breakdown voltage	BV_{EBO}	6	—	—	V	$I_E = 50 \mu A$
Collector cutoff current	I_{CBO}	—	—	0.1	μA	$V_{CB} = 50V$
Emitter cutoff current	I_{EBO}	—	—	0.1	μA	$V_{EB} = 5V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	0.13	0.35	V	$I_C / I_E = 1A / 50mA$ *
DC current transfer ratio	h_{FE}	120	—	270	—	$V_{CE} / I_C = 2V / 0.5A$
Transition frequency	f_T	—	210	—	MHz	$V_{CE} = 2V, I_E = -0.5A, f = 100MHz$ *
Output capacitance	C_{ob}	—	21	—	pF	$V_{CB} = 10V, I_E = 0A, f = 1MHz$

* Measured using pulse current

(94S-380-D228)