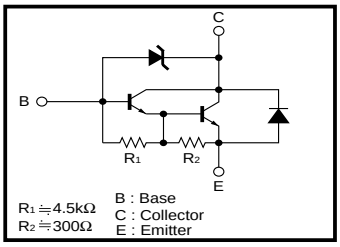
Medium Power Transistor (Motor or Relay drive) (60±10V, 4A)

2SC5576

●Features

1) Built-in zener diode between collector and base.
2) Strong protection against reverse power surges due to "L" loads.
3) Built-in resistor between base and emitter.
4) Built-in damper diode.

●Circuit diagram



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	60±10	V
Collector-emitter voltage	V_{CEO}	60±10	V
Emitter-base voltage	V_{EBO}	6	V
Collector current	I_C	4	A(DC)
		6	A(Pulse) *
Collector power dissipation	P_C	2	W
		30	W(Tc=25˚C)
Junction temperature	Tj	150	˚C
Storage temperature	Tstg	-55~+150	˚C

* Single pulse, Pw=100ms

●Packaging specifications and h_{FE}

Type	2SC5576
Package	TO-220FN
h_{FE}	2k~20k
Code	-
Basic ordering unit (pieces)	500

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	50	60	70	V	I_C=50μA
Collector-emitter breakdown voltage	BV_{CEO}	50	60	70	V	I_C=5mA
Collector cutoff current	I_{CBO}	-	-	10	μA	V_{CB}=40V
Emitter cutoff current	I_{EBO}	-	-	3	mA	V_{EB}=5V
Collector-emitter saturation voltage	$V_{CE(sat)}$	-	1	1.5	V	I_C/I_B=1.5A/6mA *1
DC current transfer ratio	h_{FE}	2000	-	10000		V_{CE}/I_C=5V/1.5A *1
Transition frequency	f_T	-	80	-	MHz	V_{CE}=5V , I_E=-0.2A , f=30MHz *2
Output capacitance	C_{ob}	-	30	-	pF	V_{CB}=10V , I_E=0A , f=1MHz
Turn-on time	t_{on}	-	0.4	-	μs	I_C=1.5A , R_L=14Ω I_{B1}=-I_{B2}=6mA V_{CC} ≃ 20V
Storage time	t_{stg}	-	1.5	-	μs	
Fall time	t_f	-	0.4	-	μs	

*1 Measured using pulse current. *2 Transition frequency of the device.