High-speed Switching Transistor (60V, 5A)

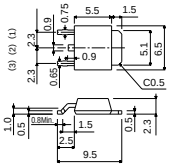
2SC5103 / 2SC5525

●Features

1) Low $V_{CE(sat)}$ (Typ. 0.15V at I_C / I_B = 3 / 0.15A)
2) High speed switching (tf : Typ. 0.1 μs at I_C = 3A)
3) Wide SOA. (safe operating area)
4) Complements the 2SA1952 / 2SA2006.

●External dimensions (Units : mm)

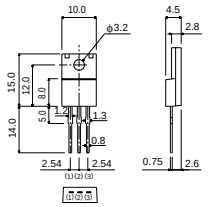
2SC5103



ROHM : CPT3
EIAJ : SC-63

(1) Base(Gate)
(2) Collector(Drain)
(3) Emitter(Source)

2SC5525



ROHM : TO-220FN

(1) Base(Gate)
(2) Collector(Drain)
(3) Emitter(Source)

●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit
Collector-base voltage		V_{CBO}	100	V
Collector-emitter voltage		V_{CEO}	60	V
Emitter-base voltage		V_{EBO}	5	V
Collector current		I_C	5	A(DC)
			10	A(Pulse) *
Collector power dissipation	2SC5103	P_C	1	W
			10	W(Tc=25°C)
	2SC5525		2	W
			25	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	2SC5103	2SC5525
Package	CPT3	TO-220FN
h_{FE}	PQ	EF
Code	TL	–
Basic ordering unit (pieces)	2500	500

●Electrical characteristics (Ta = 25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage		BV_{CBO}	100	–	–	V	I_C = 50μA
Collector-emitter breakdown voltage		BV_{CEO}	60	–	–	V	I_C = 1mA
Emitter-base breakdown voltage		BV_{EBO}	5	–	–	V	I_E = 50μA
Collector cutoff current		I_{CBO}	–	–	10	μA	V_{CB} = 100V
Emitter cutoff current		I_{EBO}	–	–	10	μA	V_{EB} = 5V
Collector-emitter saturation voltage		$V_{CE(sat)}$	–	0.15	0.3	V	I_C/I_B = 3A/0.15A *
			–	–	0.5	V	I_C/I_B = 4A/0.2A *
Base-emitter saturation voltage		$V_{BE(sat)}$	–	–	1.2	V	I_C/I_B = 3A/0.15A *
			–	–	1.5	V	I_C/I_B = 4A/0.2A *
DC current transfer ratio	2SC5103	h_{FE}	82	–	270	–	V_{CE}/I_C = 2V/1A
	2SC5525		100	–	320	–	
Transition frequency		f_T	–	120	–	MHz	V_{CB} = 10V , I_E = 0.5A , f = 30MHz *
Output capacitance		Cob	–	80	–	pF	V_{CE} = 10V , I_E = 0A , f = 1MHz
Turn-on time		ton	–	–	0.3	μs	I_C = 3A , R_L = 10Ω
Storage time		tstg	–	–	1.5	μs	I_{B1} = −I_{B2} = 0.15A
Fall time		tf	–	0.1	0.3	μs	V_{CC} ≒ 30V

* Measured using pulse current.