High-voltage Switching Transistor
(Camera strobes and Telephone, Power supply) ($-400V$, $-0.1A$)
2SA1759

● **Features**

1） High breakdown voltage. （$BV_{CEO}=-400V$）
2） Low saturation voltage, typically $V_{CE(sat)} =-0.2V$ at $I_C / I_B=-20mA / -2mA$.
3） High switching speed, typically $tf=1 \mu s$ at $I_C=100mA$.
4） Wide SOA (safe operating area).
5） Complements the 2SA4505.

● **Packaging specifications and h_{FE}**

Type	2SA1759
Package	MPT3
h_{FE}	P
Marking	AH✳
Code	T100
Basic ordering unit (pieces)	3000

✳ Denotes h_{FE}

● **Electrical characteristics** （Ta＝25℃）

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	-400	—	—	V	$I_C=-50 \mu A$
Collector-emitter breakdown voltage	BV_{CEO}	-400	—	—	V	$I_C=-1mA$
Emitter-base breakdown voltage	BV_{EBO}	-7	—	—	V	$I_E=-50 \mu A$
Collector cutoff current	I_{CBO}	—	—	-10	μA	$V_{CB}=-400V$
Emitter cutoff current	I_{EBO}	—	—	-10	μA	$V_{EB}=-6V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	-0.2	-0.5	V	$I_C/I_B=-20mA/-2mA$
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	-1.2	V	$I_C/I_B=-20mA/-2mA$
DC current transfer ratio	h_{FE}	82	—	180	—	$V_{CE}=-10V$, $I_C=-10mA$
Transition frequency	f_T	—	12	—	MHz	$V_{CE}=-10V$, $I_E=10mA$, $f=5MHz$
Output capacitance	Cob	—	13	—	pF	$V_{CB}=-10V$, $I_E=0A$, $f=1MHz$
Turn-on time	t_{on}	—	0.7	—	μs	$I_C=-100mA$ $R_L=1.5k\Omega$
Storage time	t_{stg}	—	1.8	—	μs	$I_{B1}=-I_{B2}=-10mA$
Fall time	t_f	—	1	—	μs	$V_{CC}\simeq-150V$

● **Absolute maximum ratings** （Ta＝25℃）

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	-400	V
Collector-emitter voltage	V_{CEO}	-400	V
Emitter-base voltage	V_{EBO}	-7	V
Collector current	I_C	-0.1	A（DC）
		-0.2	A（Pulse）✳1
Collector power dissipation	P_C	0.5	W
		2 ✳2	
Junction temperature	T_j	150	℃
Storage temperature	T_{stg}	$-55\sim+150$	℃

✳1 Single pulse, Pw＝100ms
✳2 When mounted on a $40\times40\times0.7$ mm ceramic board.

(96-97-A324)

Power Transistor （400V, 0.1A）
2SC4505 / 2SC4620

● **Features**

1） High breakdown voltage. （$BV_{CEO}=400V$）
2） Low saturation voltage, typically $V_{CE(sat)} =0.05V$ at $I_C / I_B=10mA / 1mA$.
3） High switching speed, typically $tf=1.7 \mu s$ at $I_C=100mA$.
4） Complements the 2SC4505 and the 2SA1759.

● **Packaging specifications and h_{FE}**

Type	2SC4505	2SC4620
Package	MPT3	ATV
h_{FE}	PQ	Q
Marking	CE✳	—
Code	T100	TV2
Basic ordering unit (pieces)	1000	2500

✳ Denotes h_{FE}

● **Electrical characteristics** （Ta＝25℃）

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	400	—	—	V	$I_C=50 \mu A$
Collector-emitter breakdown voltage	BV_{CEO}	400	—	—	V	$I_C=1mA$
Emitter-base breakdown voltage	BV_{EBO}	7	—	—	V	$I_E=50 \mu A$
Collector cutoff current	I_{CBO}	—	—	10	μA	$V_{CB}=400V$
Emitter cutoff current	I_{EBO}	—	—	10	μA	$V_{EB}=6V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	0.05	0.5	V	$I_C=10mA$, $I_B=1mA$
Base-emitter saturation voltage	$V_{BE(sat)}$	—	—	1.5	V	$I_C=10mA$, $I_B=1mA$
DC current transfer ratio	h_{FE}	82	—	270	—	$V_{CE}/I_C=10V/10mA$
Transition frequency	f_T	—	20	—	MHz	$V_{CE}=10V$, $I_E=-10mA$, $f=10MHz$
Output capacitance	Cob	—	7	—	pF	$V_{CB}=10V$, $I_E=0A$, $f=1MHz$
Turn-on time	t_{on}	—	1	—	μs	$I_C=100mA$
Storage time	t_{stg}	—	5.5	—	μs	$I_{B1}=-I_{B2}=10mA$
Fall time	t_f	—	1.7	—	μs	$V_{CC}\simeq-150V$

● **Absolute maximum ratings** （Ta＝25℃）

Parameter		Symbol	Limits	Unit	
Collector-base voltage		V_{CBO}	400	V	
Collector-emitter voltage		V_{CEO}	400	V	
Emitter-base voltage		V_{EBO}	7	V	
Collector current		I_C	0.1	A	
		I_{CP}	0.2	A	✳
Collector power dissipation	2SC4505	P_C	0.5	W	
	2SC4620		1		
Junction temperature		T_j	150	℃	
Storage temperature		T_{stg}	$-55\sim+150$	℃	

✳ Single pulse　Pw＝20ms Duty＝1 / 2

(96-178-C300)

ROHM

305