



800V/3A Switching Regulator Applications

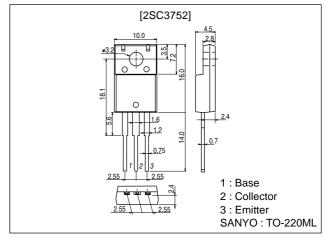
Features

- · High breakdown voltage and high reliability.
- · High-speed switching.
- · Wide ASO.
- · Adoption of MBIT process.
- · Micaless package facilitating mounting.

Package Dimensions

unit:mm

2041A



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CBO}		1100	V
Collector-to-Emitter Voltage	VCEO		800	V
Emitter-to-Base Voltage	V _{EBO}		7	V
Collector Current	lc		3	Α
Collector Current (Pulse)	I _{CP}	PW≤300μs, Duty Cycle≤10%	10	Α
Base Current	I _B		1.5	Α
Collector Dissipation	PC	Tc=25°C	30	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Offic
Collector Cutoff Current	I _{CBO}	V _{CB} =800V, I _E =0			10	μΑ
Emitter Cutoff Current	I _{EBO}	V _{EB} =5V, I _C =0			10	μA
DC Current Gain	h _{FE} 1	V _{CE} =5V, I _C =0.2A	10*		40*	
DC Current Gain	h _{FE} 2	V _{CE} =5V, I _C =1A	8			
Gain-Bandwidth Product	fT	V _{CE} =10V, I _C =0.2A		15		MHz

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*: The $h_{FE}1$ of the 2SC3752 is classified as follows. When specifying the $h_{FE}1$ rank, specify two ranks or more in principle.

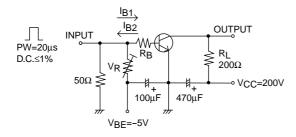
Rank	K	L	М		
hFE	10 to 20	15 to 30	20 to 40		

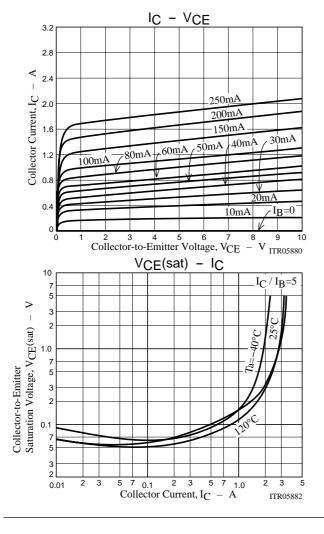
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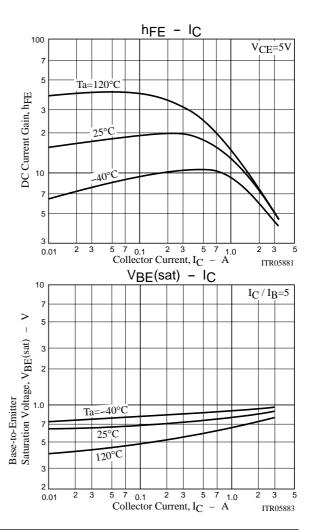
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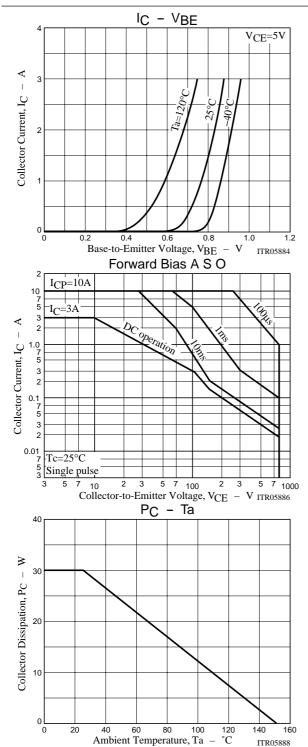
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	On I
Output Capacitance	C _{ob}	V _{CB} =10V, f=1MHz		60		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =1.5A, I _B =0.3A			2.0	V
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =1.5A, I _B =0.3A			1.5	V
Collector-to-Base Breakdown Voltage	V _(BR) CBO	$I_C=1$ mA, $I_E=0$	1100			V
Collector-to-Emitter Breakdown Voltage	V(BR)CEO	I _C =5mA, R _{BE} =∞	800			V
Emitter-to-Base Breakdown Voltage	V _{(BR)EBO}	$I_E=1$ mA, $I_C=0$	7			V
Collector-to-Emitter Sustain Voltage	V _{CEX(sus)}	I _C =1.5A, I _{B1} =-I _{B2} =0.3A, L=2mH, Clamped	800			V
Turn-ON Time	ton	V_{CC} =400V, $5I_{B1}$ =-2. $5I_{B2}$ = I_{C} =2A, R_{L} =200 Ω			0.5	μs
Storage Time	t _{stg}	V_{CC} =400V, $5I_{B1}$ =-2. $5I_{B2}$ = I_{C} =2A, R_{L} =200 Ω			3.0	μs
Fall Time	t _f	V_{CC} =400V, $5I_{B1}$ =-2. $5I_{B2}$ = I_{C} =2A, R_{L} =200 Ω			0.3	μs

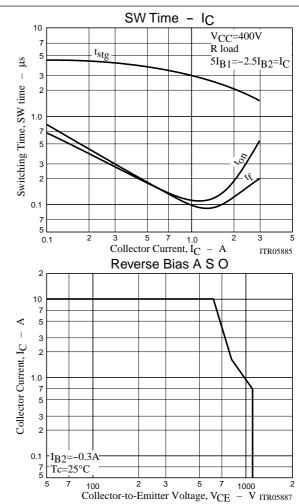
Switching Time Test Circuit











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