

## FT5764M, FT5767M

### Silicon Darlington Transistor Array

#### ABSOLUTE MAXIMUM RATINGS

(Ta = 25°C)

Rating	Symbol	Condition	Value	Unit
Storage Temperature	T <sub>stg</sub>		-55 ~ +150	°C
Junction Temperature	T <sub>j</sub>		+150	°C
Collector to Base Voltage	V <sub>CB0</sub>		150	V
Emitter to Base Voltage	V <sub>EBO</sub>		5	V
Collector to Emitter Voltage	V <sub>CEO</sub>		100	V
Collector Current	(Continuous)	I <sub>C</sub>	±3	A
	(Pulsed)	I <sub>CP</sub>	P <sub>W</sub> ≤ 1 ms, D.R. ≤ 30%	±5
Base Current (Continuous)	I <sub>B</sub>		0.2	A
Diode Forward Current	I <sub>FM</sub>	P <sub>W</sub> ≤ 0.5 ms, D.R. ≤ 15% (*)	3	A
	I <sub>FSM</sub>	P <sub>W</sub> ≤ 100 ms, Single Pulse (*)	5	A
Diode Reverse Voltage	V <sub>R</sub>	Pin 3 – Pin 2, 4. Pin 10 – Pin 9, 11 (*)	110	V
Collector Power Dissipation	P <sub>C</sub>	Ta = 25°C: Single DLT operation	1.7	W
Total Collector Power Dissipation	P <sub>T</sub>	Ta = 25°C: 4-DLT operation	4	W
Total Collector Power Dissipation	P <sub>T</sub>	Tc = 25°C: 4-DLT operation	19	W

(\*) Fast recovery Diode

DLT: Darlington Transistor

#### ELECTRICAL CHARACTERISTICS

##### Single Darlington Transistor Operation

(Ta = 25°C)

Parameter	Symbol	Test Condition	Limit			Unit
			Min.	Typ.	Max.	
Collector to Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 100 μA, I <sub>E</sub> = 0	150	–	–	V
Emitter to Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 70 mA, I <sub>C</sub> = 0	5	–	–	V
Collector to Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = 10 mA, R <sub>BE</sub> = ∞	100	–	–	V
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> = 100 V, I <sub>E</sub> = 0	–	–	10	μA
DC Current Gain	h <sub>FE1</sub>	I <sub>C</sub> = 1.5 A, V <sub>CE</sub> = 5 V (**)	2000	6000	15000	–
	h <sub>FE2</sub>	I <sub>C</sub> = 3.0 A, V <sub>CE</sub> = 5 V (**)	500	–	–	–
Collector to Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 1.5 A, I <sub>B</sub> = 3 mA (**)	–	1.2	1.5	V
Base to Emitter Saturation Voltage	V <sub>BE(sat)</sub>		–	1.7	2.0	V
Turn-On Time	t <sub>on</sub>	V <sub>CC</sub> = 30 V (***)	–	0.6	–	μs
Storage Time	t <sub>stg</sub>	I <sub>C</sub> = 1.5 A	–	1.8	–	μs
Fall Time	t <sub>f</sub>	I <sub>B1</sub> = -I <sub>B2</sub> = 3 mA	–	0.6	–	μs

##### Single Fast Recovery Diode Operation (FT5764M Only)

(Ta = 25°C)

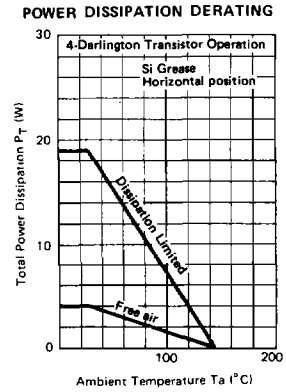
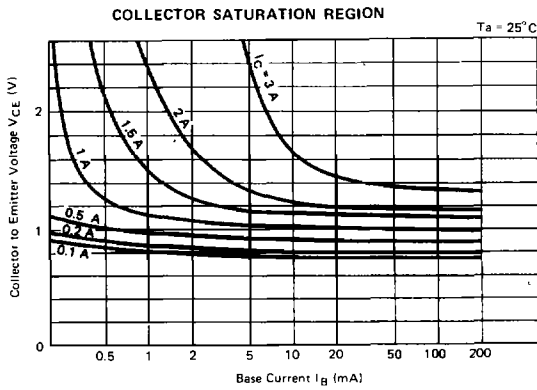
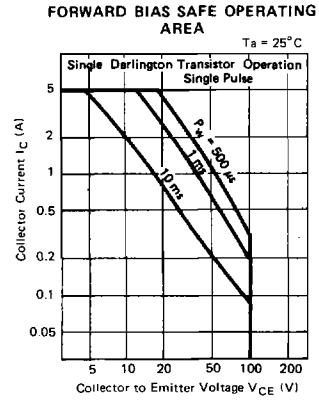
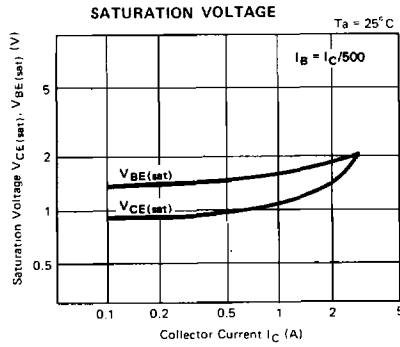
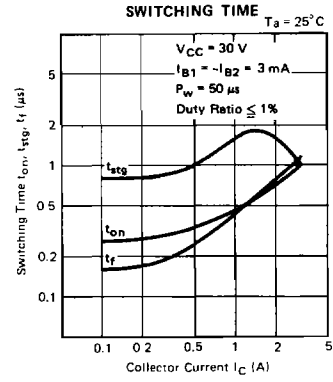
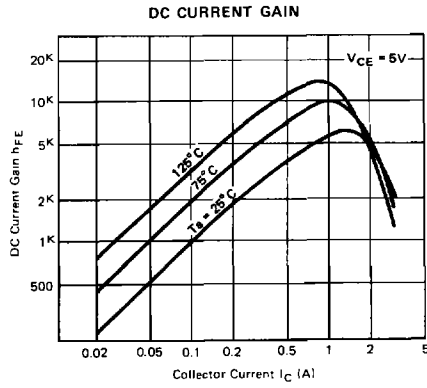
Parameter	Symbol	Test Condition	Limit			Unit
			Min.	Typ.	Max.	
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> = 100 mA	–	–	1.0	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> = 100 V	–	–	5	μA
Reverse Voltage	V <sub>R</sub>	I <sub>R</sub> = 10 μA	110	–	–	V

(\*\*) Pulsed

Pulse Width ≤ 300 μs  
Duty Ratio ≤ 6%

(\*\*\*) Pulsed

Pulse Width = 50 μs  
Duty Ratio ≤ 1%



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