

January 1990
Edition 1.1



PRODUCT PROFILE

FT5764M, FT5767M
Silicon Darlington Transistor Array

ABSOLUTE MAXIMUM RATINGS

Rating		Symbol	Condition	Value	Unit
Storage Temperature		T_{stg}		-55 ~ +150	°C
Junction Temperature		T_J		+150	°C
Collector to Base Voltage		V_{CBO}		150	V
Emitter to Base Voltage		V_{EBO}		5	V
Collector to Emitter Voltage		V_{CEO}		100	V
Collector Current	(Continuous)	I_C		±3	A
	(Pulsed)	I_{CP}	$P_W \leq 1 \text{ ms, D.R.} \leq 30\%$	±5	A
Base Current (Continuous)		I_B		0.2	A
Diode Forward Current		I_{FM}	$P_W \leq 0.5 \text{ ms, D.R.} \leq 15\% (*)$	3	A
		I_{FSM}	$P_W \leq 100 \text{ ms, Single Pulse} (*)$	5	A
Diode Reverse Voltage		V_R	Pin 3 - Pin 2, 4, Pin 10 - Pin 9, 11 (*)	110	V
Collector Power Dissipation		P_C	$T_a = 25^\circ\text{C}$: Single DLT operation	1.7	W
Total Collector Power Dissipation		P_T	$T_a = 25^\circ\text{C}$: 4-DLT operation	4	W
Total Collector Power Dissipation		P_T	$T_c = 25^\circ\text{C}$: 4-DLT operation	19	W

(*) Fast recovery Diode DLT: Darlington Transistor

ELECTRICAL CHARACTERISTICS

Single Darlington Transistor Operation

($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Test Condition	Limit			Unit
			Min.	Typ.	Max.	
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100 \mu\text{A}, I_E = 0$	150	-	-	V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 70 \text{ mA}, I_C = 0$	5	-	-	V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10 \text{ mA}, R_{BE} = \infty$	100	-	-	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 100 \text{ V}, I_E = 0$	-	-	10	μA
DC Current Gain	h_{FE1}	$I_C = 1.5 \text{ A}, V_{CE} = 5 \text{ V} (**)$	2000	6000	15000	-
	h_{FE2}	$I_C = 3.0 \text{ A}, V_{CE} = 5 \text{ V} (**)$	500	-	-	-
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 1.5 \text{ A}, I_B = 3 \text{ mA} (**)$	-	1.2	1.5	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$		-	1.7	2.0	V
Turn-On Time	t_{on}	$V_{CC} = 30 \text{ V} (***)$ $I_C = 1.5 \text{ A}$ $I_{B1} = -I_{B2} = 3 \text{ mA}$	-	0.6	-	μs
Storage Time	t_{stg}		-	1.8	-	μs
Fall Time	t_f		-	0.6	-	μs

Single Fast Recovery Diode Operation (FT5764M Only)

($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Test Condition	Limit			Unit
			Min.	Typ.	Max.	
Forward Voltage	V_F	$I_F = 100 \text{ mA}$	-	-	1.0	V
Reverse Current	I_R	$V_R = 100 \text{ V}$	-	-	5	μA
Reverse Voltage	V_R	$I_R = 10 \mu\text{A}$	110	-	-	V

(**) Pulsed Pulse Width $\leq 300 \mu\text{s}$ Duty Ratio $\leq 6\%$
(***) Pulsed Pulse Width $= 50 \mu\text{s}$ Duty Ratio $\leq 1\%$



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