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Edition 1.1

FUJITSU

T-43-25

## PRODUCT PROFILE

## FT5753M, FT5756M

## Silicon Darlington Transistor Array

## ABSOLUTE MAXIMUM RATINGS

(Ta = 25°C)

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)	$I_C$	±1.5	A
	(Pulsed)	$I_{CP}$	$P_W \leq 1$ ms, D.R. $\leq 50\%$	±3
Base Current (Continuous)	$I_B$		0.1	A
Diode Forward Current	$I_{FM}$	$P_W \leq 0.5$ ms, D.R. $\leq 25\%$ (*)	1.5	A
	$I_{FSM}$	$P_W \leq 100$ ms, Single Pulse (*)	3	A
Diode Reverse Voltage	$V_R$	Pin 3 - Pin 2, 4, Pin 10 - Pin 9, 11 (*)	110	V
Isolation Voltage	$V_{ISO}$	Fin 13 - Pin 1 ~ 12	500	$V_{r.m.s.}$
Collector Power Dissipation	$P_C$	Ta = 25°C: Single DLT operation	1.9	W
Total Collector Power Dissipation	$P_T$	Ta = 25°C: 4-DLT operation	4	W
Total Collector Power Dissipation	$P_T$	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	$V_{(BR)CBO}$	$I_C = 100 \mu A, I_E = 0$	150	-	-	V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 70$ mA, $I_C = 0$	5	-	-	V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10$ mA, $R_{BE} = \infty$	100	-	-	V
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 100$ V, $I_E = 0$	-	-	10	$\mu A$
DC Current Gain	$h_{FE1}$	$I_C = 0.75$ A, $V_{CE} = 5$ V (**)	2000	6000	15000	-
	$h_{FE2}$	$I_C = 1.5$ A, $V_{CE} = 5$ V (**)	500	-	-	-
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 0.75$ A, $I_B = 1.5$ mA (**)	-	1.1	1.5	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 0.75$ A, $I_B = 1.5$ mA (**)	-	1.6	2.0	V
Turn-On Time	$t_{on}$	$V_{CC} = 30$ V (***)	-	0.5	-	$\mu s$
Storage Time	$t_{stg}$	$I_C = 0.75$ A	-	2.1	-	$\mu s$
Fall Time	$t_f$	$I_{B1} = -I_{B2} = 1.5$ mA	-	0.4	-	$\mu s$

## Single Fastrecovery Diode Operation (FT5753M Only)

(Ta = 25°C)

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

(\*\*) Pulsed

Pulse Width  $\leq 300 \mu s$   
Duty Ratio  $\leq 6\%$ 

(\*\*\*) Pulsed

Pulse Width = 50  $\mu s$   
Duty Ratio  $\leq 1\%$

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