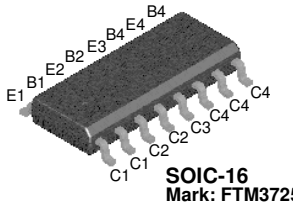
FAIRCHILD
SEMICONDUCTOR®

FTM3725

NPN Transistor

- This device is designed for high current, low impedance line driver applications.
- Sourced from process 26.



SOIC-16
Mark: FTM3725

Absolute Maximum Ratings* T_a=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{CEO}	Collector-Emitter Voltage	40	V
V_{CBO}	Collector-Base Voltage	60	V
V_{EBO}	Emitter-Base Voltage	6.0	V
I_C	Collector Current - Continuous	1.2	A
T_J, T_{STG}	Operating and Storage Junction Temperature Range	- 55 ~ 150	°C

* These ratings are limiting values above whitch the serviceability of any semiconductor device may be impaird.

NOTES:
1. These ratings are based on a maximum junction temperature of 150 degrees C.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Electrical Characteristics T_a=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristics						
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage *	I_C = 10mA, I_B = 0	40			V
$V_{(BR)CES}$	Collector-Emitter Breakdown Voltage	I_C = 10μA, V_{BE} = 0	60			V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	I_C = 10μA, I_E = 0	60			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	I_E = 10μA, I_C = 0	6.0			V
I_{CBO}	Collector Cutoff Current	V_{CB} = 50V, I_E = 0 V_{CB} = 50V, I_E = 0, T_a = 100°C			100 10	nA μA
On Characteristics *						
h_{FE}	DC Current Gain	I_C = 10mA, V_{CE} = 1.0V I_C = 100mA, V_{CE} = 1.0V I_C = 100mA, V_{CE} = 1.0V, T_a = 55°C I_C = 300mA, V_{CE} = 1.0V I_C = 500mA, V_{CE} = 1.0V I_C = 500mA, V_{CE} = 1.0V, T_a = 55°C I_C = 800mA, V_{CE} = 2.0V I_C = 1.0mA, V_{CE} = 5.0V	30 60 30 40 35 20 20 25		 180	
V_{CE}(sat)	Collector-Emitter Saturation Voltage	I_C = 10mA, I_B = 1.0mA I_C = 100mA, I_B = 10mA I_C = 300mA, I_B = 30mA I_C = 500mA, I_B = 50mA I_C = 800mA, I_B = 80mA I_C = 1.0mA, I_B = 100mA			0.25 0.26 0.4 0.52 0.8 0.95	V V V V V V
V_{BE}(sat)	Base-Emitter Saturation Voltage	I_C = 10mA, I_B = 1.0mA I_C = 100mA, I_B = 10mA I_C = 300mA, I_B = 30mA I_C = 500mA, I_B = 50mA I_C = 800mA, I_B = 80mA I_C = 1.0mA, I_B = 100mA			0.76 0.86 1.1 1.2 1.5 1.7	V V V V V V

Electrical Characteristics* (Continued) T_a=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Small Signal Characteristics						
f_T	Current Gain Bandwidth Product	I_C = 50mA, V_{CE} = 10V, f = 100MHz	250			MHz
C_{obo}	Output Capacitance	V_{CB} = 10V, I_E = 0, f = 1.0MHz			15	pF
C_{ibo}	Input Capacitance	V_{EB} = 0.5V, I_C = 0, f = 1.0MHz			65	pF
Switching Characteristics						
t_{on}	Turn-on Time	V_{CC} = 30V, V_{BE} = 3.8V I_C = 500mA, I_{B1} = 50mA		20		ns
t_d	Delay Time			10		ns
t_r	Rise Time			12		ns
t_{off}	Turn-off Time	V_{CC} = 30V, I_C = 500mA I_{B1} = I_{B2} = 50mA		250		ns
t_s	Storage Time			235		ns
t_f	Fall Time			15		ns

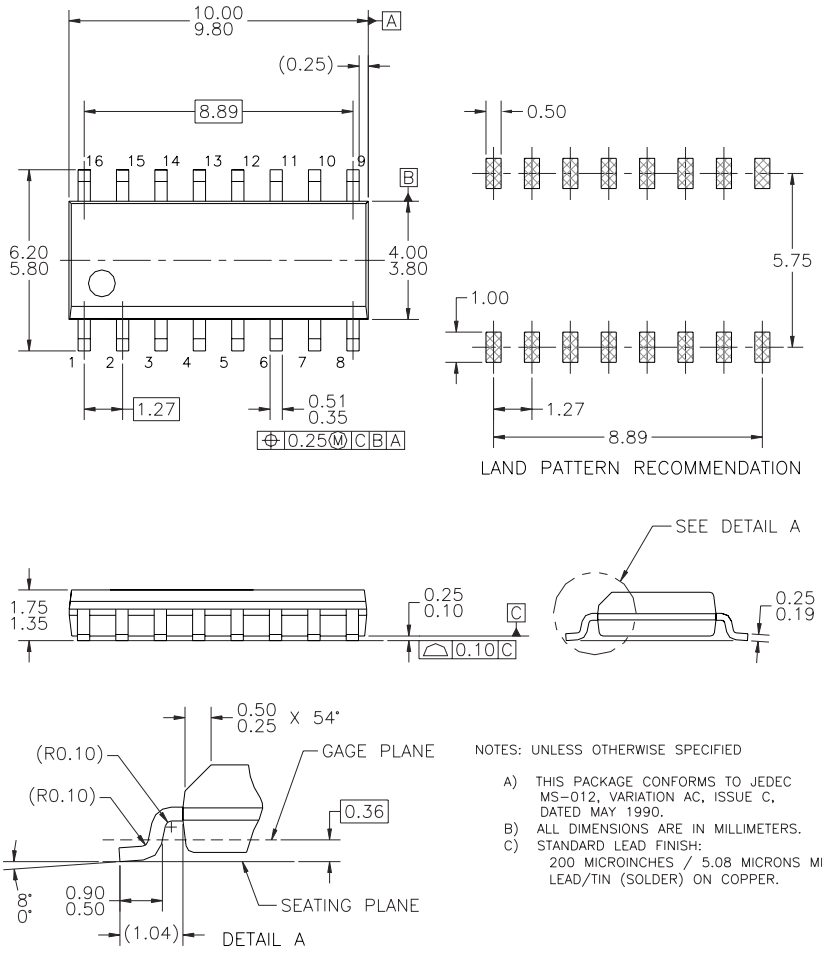
* Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 1.0%

Thermal Characteristics T_a=25°C unless otherwise noted

Symbol	Parameter	Max.	Units
P_D	Total Device Dissipation Derate above 25°C	1.0 8.0	W mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient Effectine 4 Die Each Die	 125 240	 °C/W °C/W

Package Dimensions

SOIC-16



NOTES: UNLESS OTHERWISE SPECIFIED

A) THIS PACKAGE CONFORMS TO JEDEC MS-012, VARIATION AC, ISSUE C, DATED MAY 1990.
B) ALL DIMENSIONS ARE IN MILLIMETERS.
C) STANDARD LEAD FINISH: 200 MICROINCHES / 5.08 MICRONS MIN. LEAD/TIN (SOLDER) ON COPPER.

Dimensions in Millimeters

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