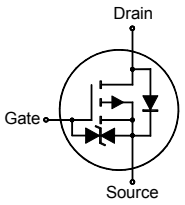
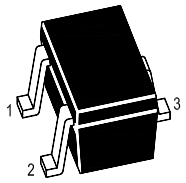
MMFTP84KW

P-Channel Enhancement Mode MOSFET

Features

- Logic-level compatible
- Very fast switching





1. Gate 2. Source 3. Drain
SOT-323 Plastic Package

Applications

- Relay driver
- High-side loadswitch
- Switching circuits

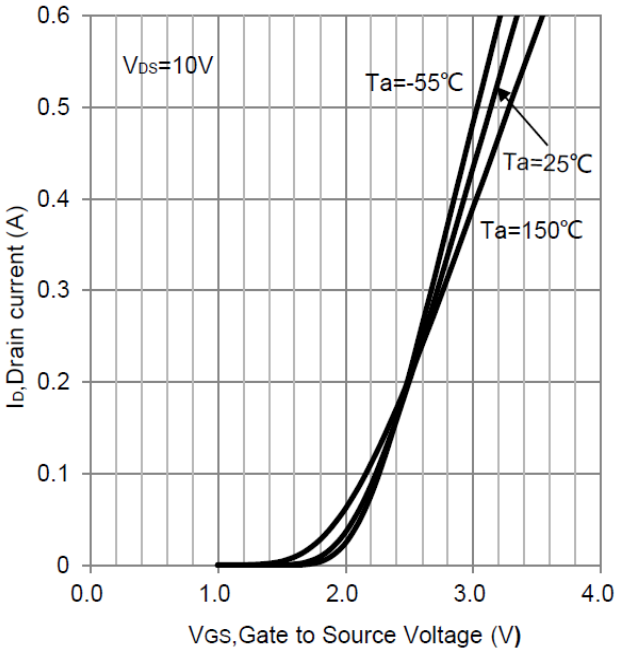
Absolute Maximum Ratings(T_a = 25℃)

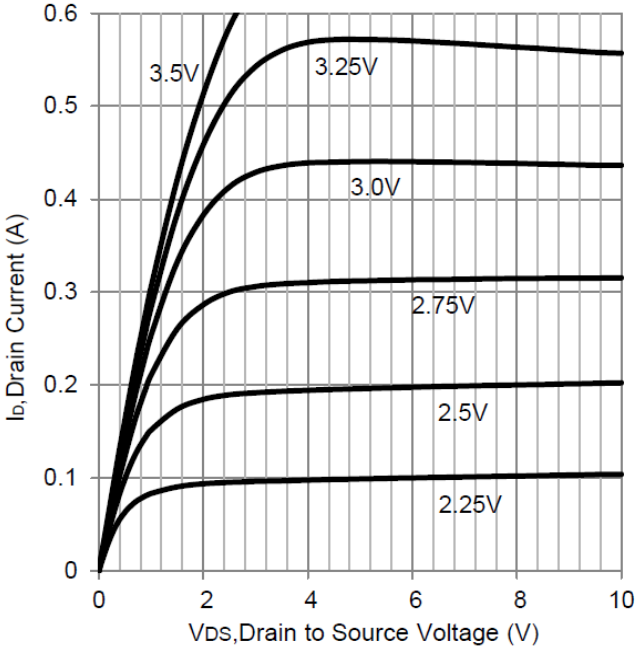
Parameter	Symbol	Value	Unit
Drain-Source Voltage	$-V_{DS}$	50	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	$-I_D$	130	mA
Peak Drain Current, Pulsed	$-I_{DM}$	520	mA
Power Dissipation [1)]	P_D	200	mW
Thermal Resistance from Juntion to Ambient	$R_{\theta JA}$	625	℃/W
Operating Junction Temperature Range	T_j	- 55 to + 150	℃
Storage Temperature Range	T_{stg}	- 55 to + 150	℃

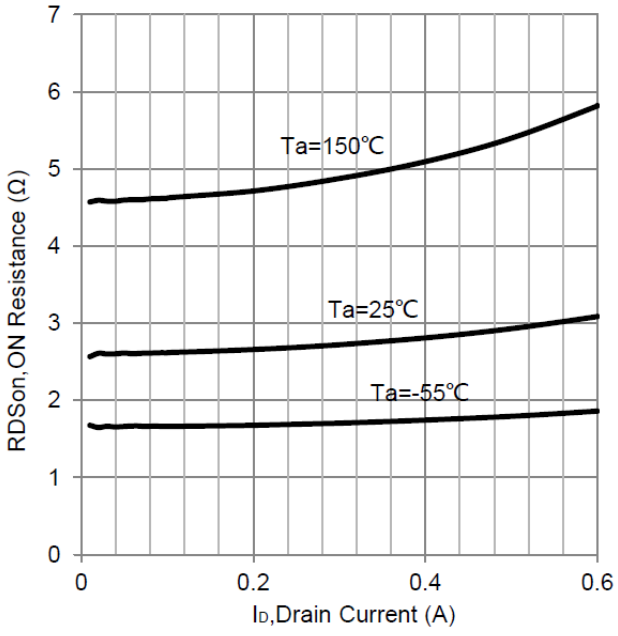
[1)] FR-5 = 1.0 × 0.75 × 0.062 in.

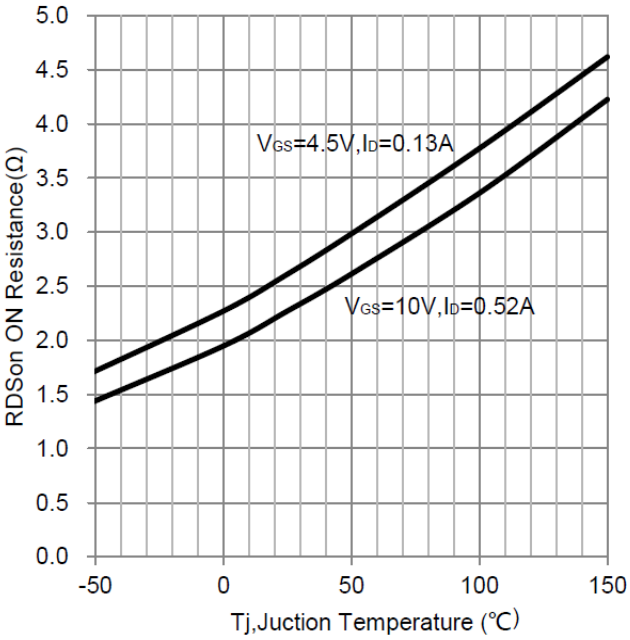
Characteristics at T_a= 25℃ unless otherwise specified

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at $-I_D$ = 250 μA	$-V_{(BR)DSS}$	50	-	-	V
Zero Gate Voltage Drain Current at $-V_{DS}$ = 25 V at $-V_{DS}$ = 50 V	$-I_{DSS}$	- -	- -	0.1 15	μA
Gate-Source Leakage at V_{GS} = ± 20 V	I_{GSS}	-	-	± 10	μA
Gate-Source Threshold Voltage at V_{DS} = V_{GS}, $-I_D$ = 250 μA	$-V_{GS(th)}$	0.9	-	2	V
Drain-Source On-State Resistance at $-V_{GS}$ = 5 V, $-I_D$ = 100 mA	$R_{DS(on)}$	-	-	10	Ω
Forward Transconductance at $-V_{DS}$ = 25 V, $-I_D$ = 100 mA, f = 1KHz	gfs	50	-	-	mS
Input Capacitance at $-V_{DS}$ = 5 V	C_{iss}	-	30	-	pF
Output Capacitance at $-V_{DS}$ = 5 V	C_{oss}	-	10	-	pF
Reverse Transfer Capacitance at $-V_{DS}$ = 5 V	C_{rss}	-	5	-	pF
Turn-On Rise Time at $-V_{DD}$ = 15 V, $-I_D$ = 2.5 A, R_L = 50 Ω	$t_{d(on)}$	-	2.5	-	nS
Turn-On Rise Time at $-V_{DD}$ = 15 V, $-I_D$ = 2.5 A, R_L = 50 Ω	t_r	-	1	-	nS
Turn-Off Delay Time at $-V_{DD}$ = 15 V, $-I_D$ = 2.5 A, R_L = 50 Ω	$t_{d(off)}$	-	16	-	nS
Turn-Off Fall Time at $-V_{DD}$ = 15 V, $-I_D$ = 2.5 A, R_L = 50 Ω	t_f	-	8	-	nS

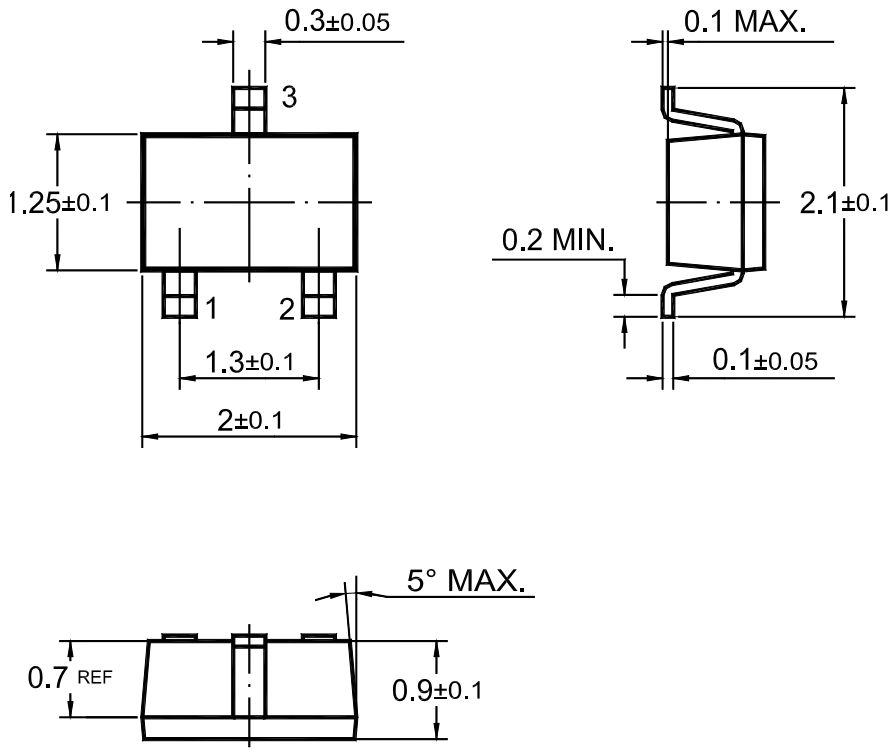

VDS=10V
Ta=-55℃
Ta=25℃
Ta=150℃
ID,Drain current (A)
VGS,Gate to Source Voltage (V)
0.6
0.5
0.4
0.3
0.2
0.1
0
0.0
1.0
2.0
3.0
4.0


3.5V
3.25V
3.0V
2.75V
2.5V
2.25V
ID,Drain Current (A)
VDS,Drain to Source Voltage (V)
0.6
0.5
0.4
0.3
0.2
0.1
0
0
2
4
6
8
10

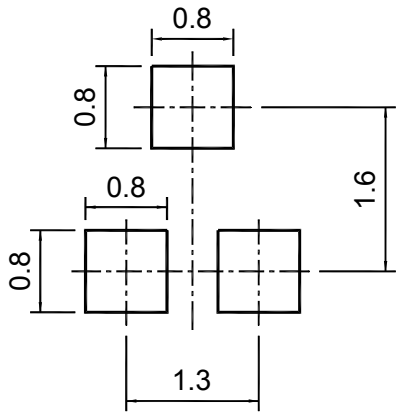

Ta=150℃
Ta=25℃
Ta=-55℃
RDSon,ON Resistance (Ω)
ID,Drain Current (A)
7
6
5
4
3
2
1
0
0
0.2
0.4
0.6


VGS=4.5V,ID=0.13A
VGS=10V,ID=0.52A
RDSon ON Resistance(Ω)
Tj,Juction Temperature (℃)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-50
0
50
100
150

Package Outline Dimensions(Unit: in mm) SOT-323



Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-323	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000