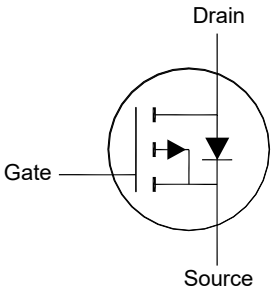
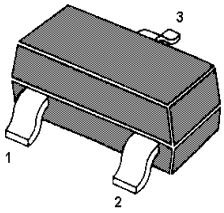
MMFTP2301-AH

P-Channel Enhancement Mode MOSFET

Features

- AEC-Q101 is Available
- Halogen and Antimony Free(HAF), RoHS compliant





1. Gate 2. Source 3. Drain
TO-236 Plastic Package

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$-V_{DS}$	20	V
Gate-Source Voltage	V_{GS}	± 8	V
Drain Current - Continuous	$-I_D$	2.3	A
Peak Drain Current, Pulsed [1]	$-I_{DM}$	10	A
Power Dissipation	P_{tot}	1.25 [2] 0.8 [3]	W
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	100 [2] 166 [3]	℃/W
Operating Junction Temperature Range	T_j	- 55 to + 150	℃
Storage Temperature Range	T_{stg}	- 55 to + 150	℃

[1] Repetitive Rating: Pulse width limited by maximum junction temperature.

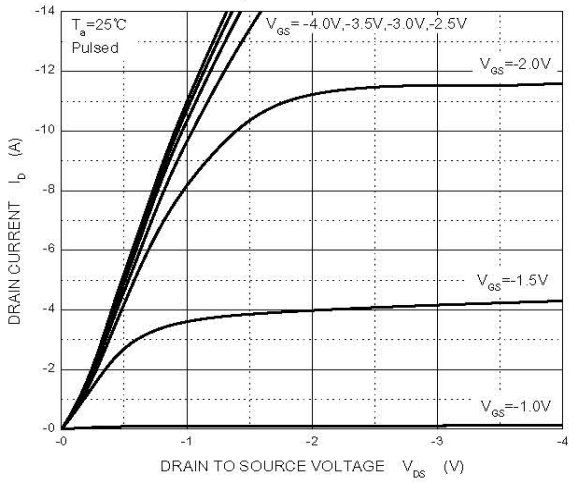
[2] Surface Mounted on FR4 Board, t ≤ 5 sec.

[3] Surface Mounted on FR4 Board.

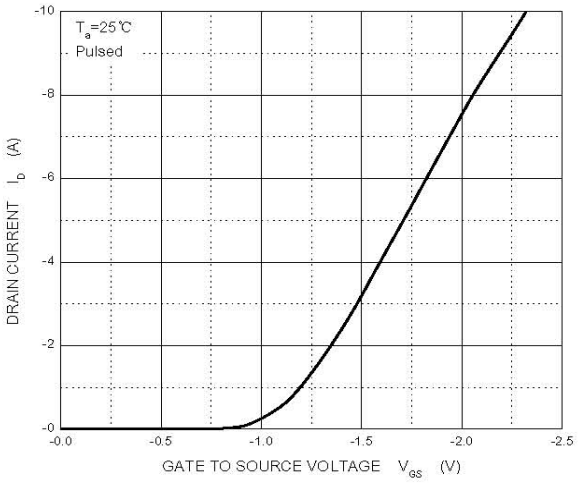
Characteristics at T_a = 25℃ unless otherwise specified

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at $-I_D$ = 250 μA	$-V_{(BR)DSS}$	20	-	-	V
Drain-Source Leakage Current at $-V_{DS}$ = 16 V	$-I_{DSS}$	-	-	1	μA
Gate Leakage Current at V_{GS} = ± 8 V	I_{GSS}	-	-	± 100	nA
Gate-Source Threshold Voltage at V_{DS} = V_{GS}, $-I_D$ = 250 μA	$-V_{GS(th)}$	0.45	-	0.95	V
Drain-Source On-State Resistance at $-V_{GS}$ = 2.5 V, $-I_D$ = 2 A at $-V_{GS}$ = 4.5 V, $-I_D$ = 2.8 A	$R_{DS(on)}$	- -	- -	150 100	mΩ
Forward Transconductance at $-V_{DS}$ = 5 V, $-I_D$ = 4 A	g_{FS}	-	6.5	-	S
Input Capacitance at $-V_{DS}$ = 6 V, f = 1 MHz	C_{iss}	-	882.51	-	pF
Output Capacitance at $-V_{DS}$ = 6 V, f = 1 MHz	C_{oss}	-	145.54	-	pF
Reverse Transfer Capacitance at $-V_{DS}$ = 6 V, f = 1 MHz	C_{rss}	-	97.26	-	pF
Turn-On Delay Time at $-V_{DD}$ = 6 V, $-V_{GEN}$ = 4.5 V, $-I_D$ = 1 A, R_G = 6 Ω, R_L = 6 Ω	$t_{d(on)}$	-	17.28	-	ns
Turn-Off Delay Time at $-V_{DD}$ = 6 V, $-V_{GEN}$ = 4.5 V, $-I_D$ = 1 A, R_G = 6 Ω, R_L = 6 Ω	$t_{d(off)}$	-	36.05	-	ns
Turn-On Rise Time at $-V_{DD}$ = 6 V, $-V_{GEN}$ = 4.5 V, $-I_D$ = 1 A, R_G = 6 Ω, R_L = 6 Ω	t_r	-	3.73	-	ns
Turn-Off Fall Time at $-V_{DD}$ = 6 V, $-V_{GEN}$ = 4.5 V, $-I_D$ = 1 A, R_G = 6 Ω, R_L = 6 Ω	t_f	-	6.19	-	ns

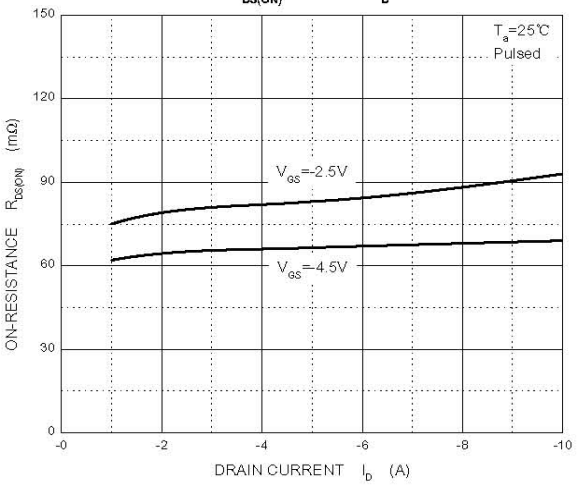
Output Characteristics



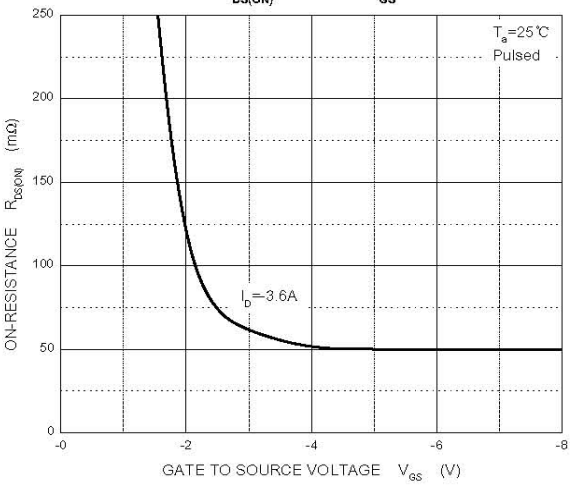
Transfer Characteristics



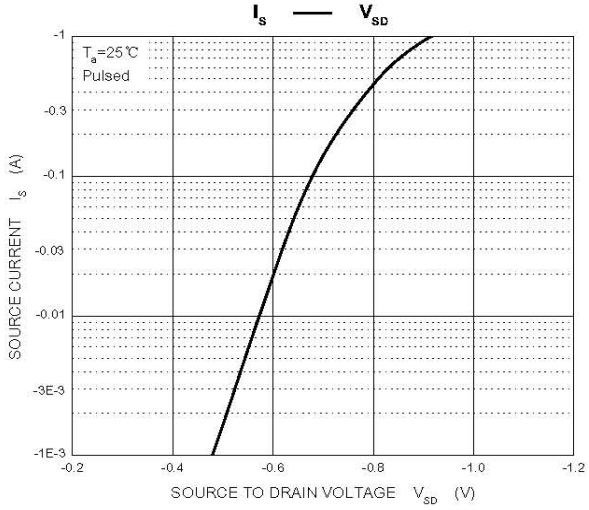
$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



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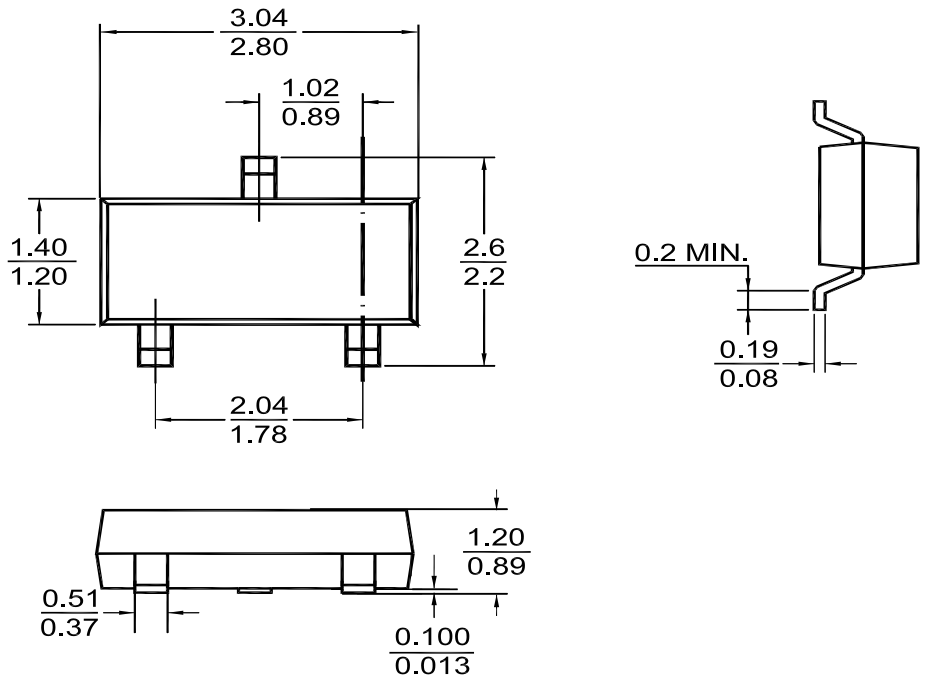
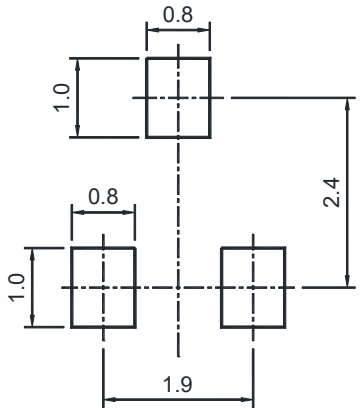
PACKAGE OUTLINE

Plastic surface mounted package (Dimensions in mm) TO-236



Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
TO-236	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000