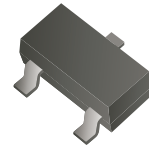


ACMSP3401-HF

P-Channel

RoHS Device

Halogen Free



Features

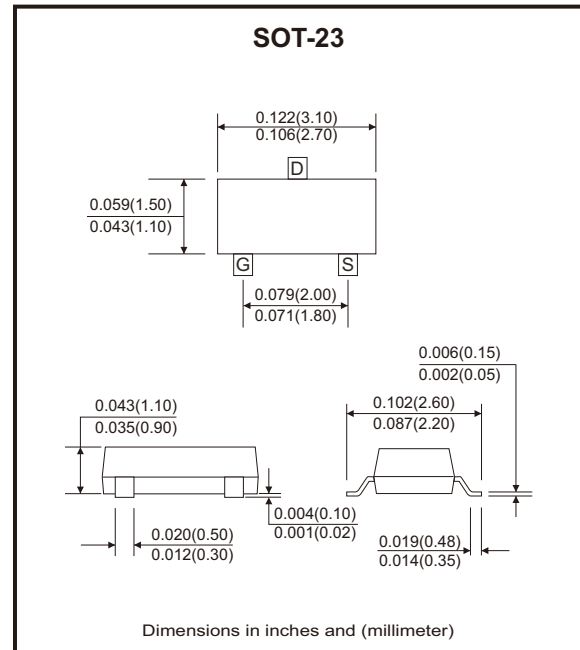
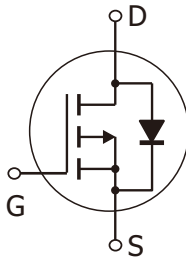
- $R_{DS(ON)} \leq 55m\Omega$ @ $V_{GS} = -10V$.
- $R_{DS(ON)} \leq 75m\Omega$ @ $V_{GS} = -4.5V$.
- $R_{DS(ON)} \leq 110m\Omega$ @ $V_{GS} = -2.5V$.
- High-speed switching.
- Drive circuits can be simple.
- Parallel use is easy.
- AEC-Q101 Qualified.

Mechanical data

- Case: SOT-23, molded plastic.
- Terminals: Matte tin plated leads, solderable per MIL-STD-202, method 208.
- Molding compound, UL flammability classification rating 94V-0.

Circuit Diagram

- G : Gate
- S : Source
- D : Drain



Maximum Ratings (at $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	-30	V
Gate-source voltage	V_{GS}	± 12	V
Continuous drain current $T_A=25^\circ\text{C}$	I_D	-4	A
Power dissipation $T_A=25^\circ\text{C}$	P_D	1.2	W
Thermal resistance junction to ambient air	$R_{\theta JA}$	105	$^\circ\text{C/W}$
Operating junction temperature range	T_J	-55 to +150	$^\circ\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^\circ\text{C}$

Electrical Characteristics (at Ta=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Off Characteristics						
Drain-source breakdown voltage	BV _{DSS}	V _{GS} = 0V, I _D = 250μA	-30			V
Drain-source leakage current	I _{DSS}	V _{DS} = -20V, V _{GS} = 0V			-1	μA
Gate-body leakage	I _{GSS}	V _{GS} = ±12V, V _{DS} = 0V			±100	nA
On Characteristics (Note 2)						
Static drain-source on resistance	R _{DS(ON)}	V _{GS} = -10V, I _D = -4.2A		45	55	mΩ
		V _{GS} = -4.5V, I _D = -4A		62	75	
		V _{GS} = -2.5V, I _D = -1A		94	110	
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	-0.7	-1	-1.3	V
Dynamic Characteristics (Note 3)						
Input capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = -15V, f = 1MHz		965		pF
Output capacitance	C _{oss}			70		
Reverse transfer capacitance	C _{rss}			64		
Drain-Source Diode Characteristics						
Diode forward voltage (Note 1)	V _{SD}	I _S = -1A, V _{GS} = 0V		0.8	-1	V

Notes: 1. Surface mounted on FR4 board, $t \leq 10$ sec.

2. Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

3. Guaranteed by design, not subject to production.

Typical Rating and Characteristic Curves (ACMSP3401-HF)

Fig.1 - Output Characteristics

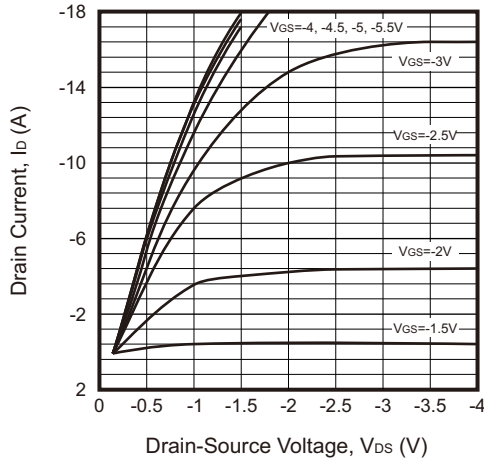


Fig.2 - Drain-Source on Resistance

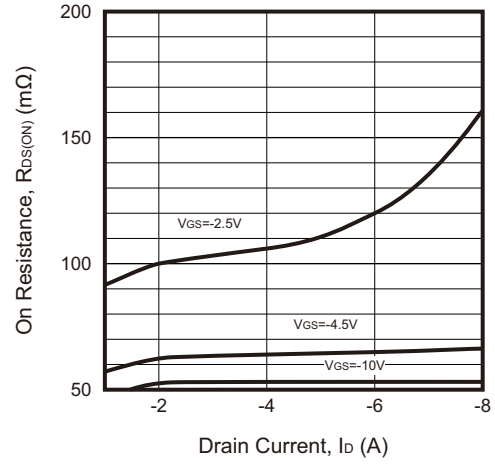


Fig.3 - Drain-Source On Resistance

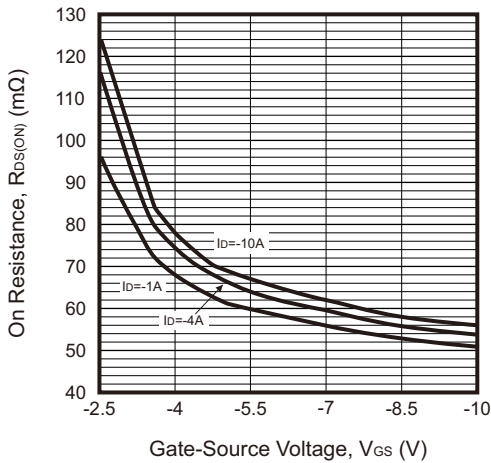


Fig.4 - Gate Threshold Voltage

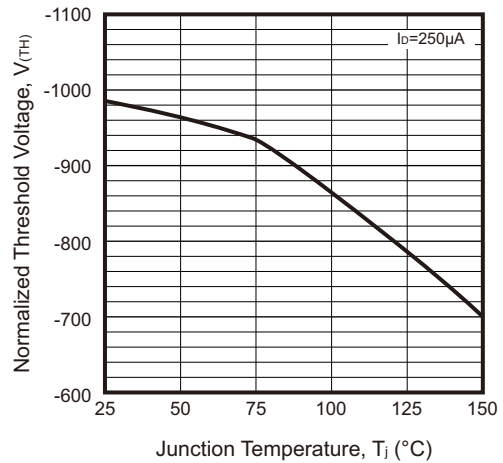


Fig.5 - Drain-Source on Resistance

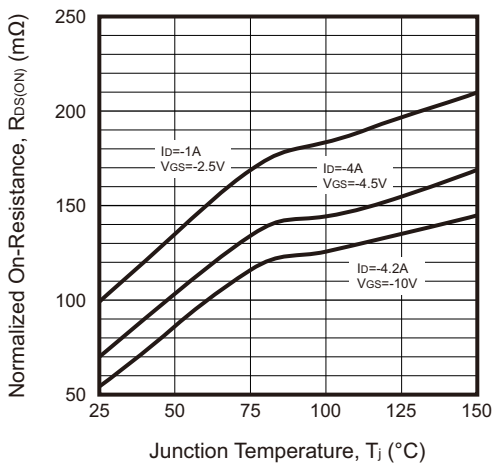
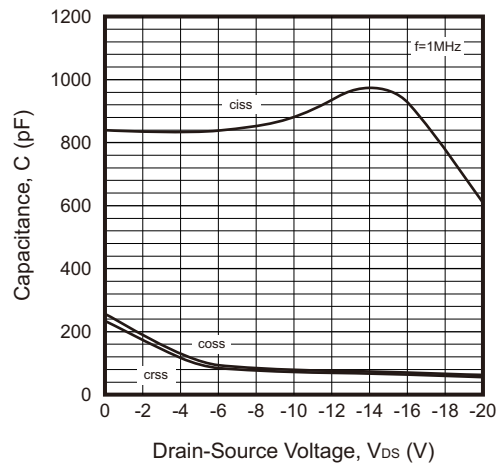
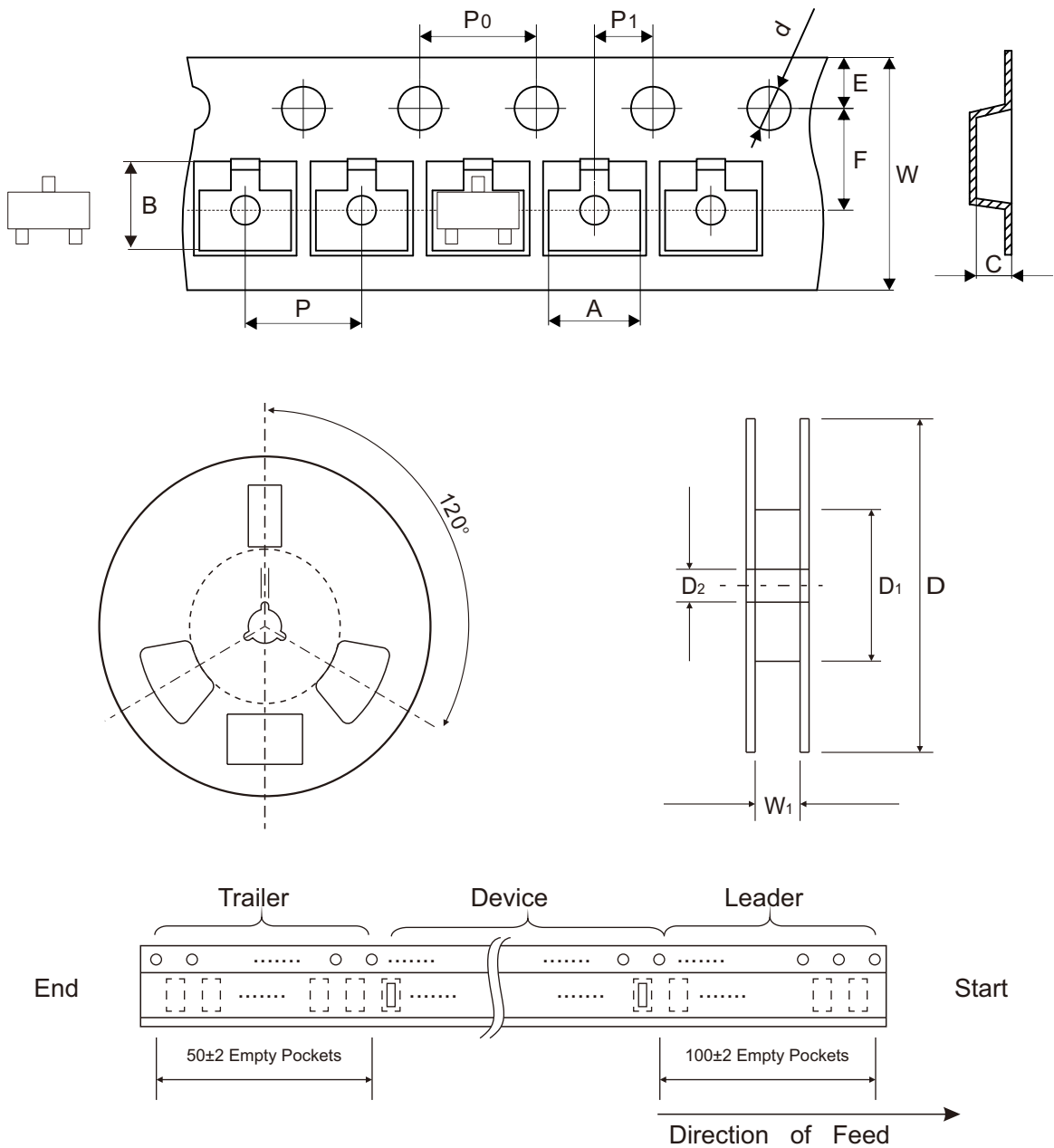


Fig.6 - Capacitance



Reel Taping Specification

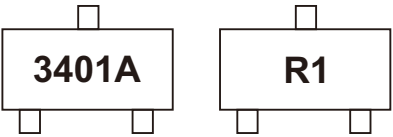


SOT-23	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	1.50 ± 0.10	178.00 ± 1.00	54.00 ± 0.50	13.00 ± 0.50
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 ± 0.004	0.059 ± 0.004	7.008 ± 0.039	2.126 ± 0.020	0.512 ± 0.020

SOT-23	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	$8.00 + 0.30 - 0.10$	9.50 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	$0.315 + 0.012 - 0.004$	0.374 ± 0.039

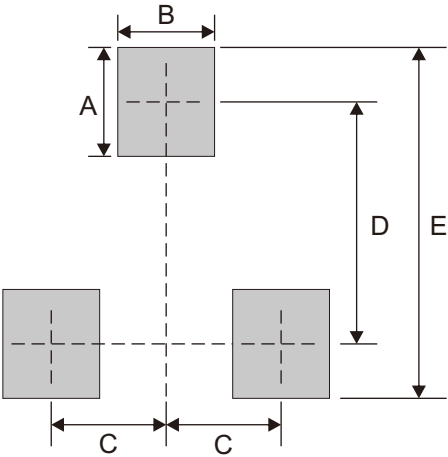
Marking Code

Part Number	Marking Code	
ACMSP3401-HF	3401A	R1



Suggested P.C.B. PAD Layout

SIZE	SOT-23	
	(mm)	(inch)
A	0.90	0.035
B	0.80	0.031
C	0.95	0.037
D	2.00	0.079
E	2.90	0.114



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-23	3,000	7