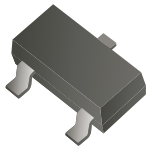
ACMS2304T-HF

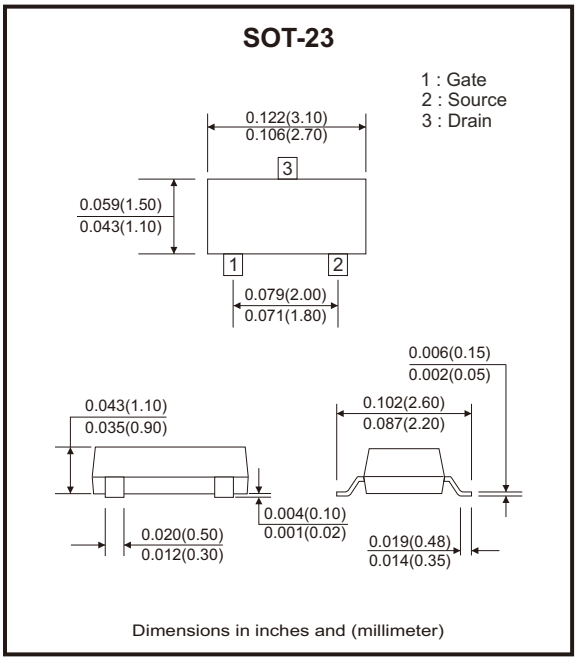
N-Channel
RoHS Device
Halogen Free



Features

- Electrostatic sensitive devices.
- V_{DS} (V) = 30V.
- I_D = 2.6A.
- $R_{DS(ON)}$ < 70mΩ (V_{GS} = 10V)
  $R_{DS(ON)}$ < 105mΩ (V_{GS} = 4.5V)
- AEC-Q101 Qualified.

SOT-23

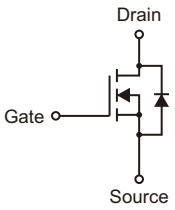


Dimensions in inches and (millimeter)

Mechanical data

- Case: SOT-23, molded plastic.
- Mounting position: Any.

Circuit Diagram



Maximum Ratings (at Ta=25°C unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-source voltage		V_{DSS}	30	V
Gate-source voltage		V_{GSS}	±20	V
Continuous drain current	T_A = 25°C T_A = 70°C	I_D	2.6 2.1	A
Pulsed drain current		I_{DM}	10	A
Power dissipation		P_D	0.75	W
Thermal resistance, junction to ambient		$R_{\theta JA}$	166	°C/W
Junction and storage temperature range		T_J, T_{STG}	-55 to +150	°C

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Static Parameters						
Drain-source breakdown voltage	BV_{DSS}	V_{GS} = 0V, I_D = 250μA	30			V
Zero gate voltage drain current	I_{DSS}	V_{DS} = 30V, V_{GS} = 0V			1	μA
Gate-body leakage	I_{GSS}	V_{DS} = 0V , V_{GS} = ±20V			±100	nA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250μA	1.3		3	V
On-state drain current	$I_{D(on)}$	V_{DS} = 4.5V, V_{GS} = 10V	6			A
Static drain-source on resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 2.5A		55	70	mΩ
		V_{GS} = 4.5V, I_D = 2A		80	105	
Forward transconductance	g_{FS}	V_{DS} = 4.5V, I_D = 2.5A		6		S
Drain-source diode forward voltage	V_{SD}	V_{GS} = 0V, I_S = 1.25A		0.8	1.2	V
Max. body-diode continuous current	I_S				0.9	A
Dynamic Characteristics						
Input capacitance	C_{iss}	V_{DS} = 15V, V_{GS} = 0V, f = 1MHz		225		pF
Output capacitance	C_{oss}			50		
Reverse transfer capacitance	C_{rss}			28		
Gate resistance	R_G	V_{DS} = 0V, V_{GS} = 0V, f = 1MHz		3		Ω
Switching Characteristics						
Turn-on delay time	$t_{d(on)}$	V_{DS} = 15V, R_L = 15Ω, V_{GEN} = 10V, R_{GEN} = 6Ω, I_D = 1A		7.5	12	nS
Rise time	t_r			12.5	20	
Turn-off delay time	$t_{d(off)}$			19	30	
Fall time	t_f			15	25	
Gate charge	Q_g	V_{DS} = 15V, I_D = 2.5A, V_{GS} = 5V		2.6	4	nC
Total gate charge	Q_{gt}	V_{DS} = 15V, I_D = 2.5A, V_{GS} = 10V		4.6	7	
Gate-source charge	Q_{gs}			0.8		
Gate-drain charge	Q_{gd}			1.15		

Typical Rating and Characteristic Curves (ACMS2304T-HF)

Fig.1 - Output Characteristics

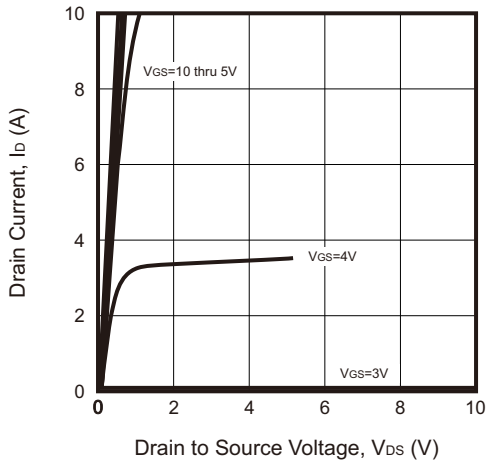


Fig.2 - Transfer Characteristics

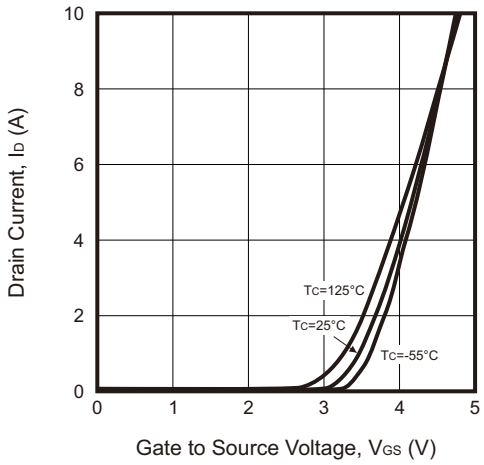


Fig.3 - On-Resistance vs. Drain Current and Gate Voltage

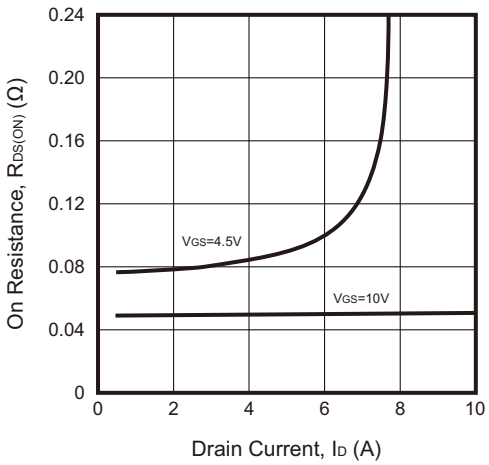


Fig.4 - Capacitance

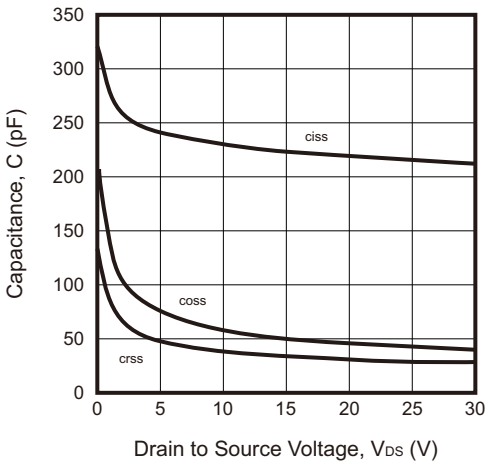


Fig.5 - Source Drain Diode Forward Voltage

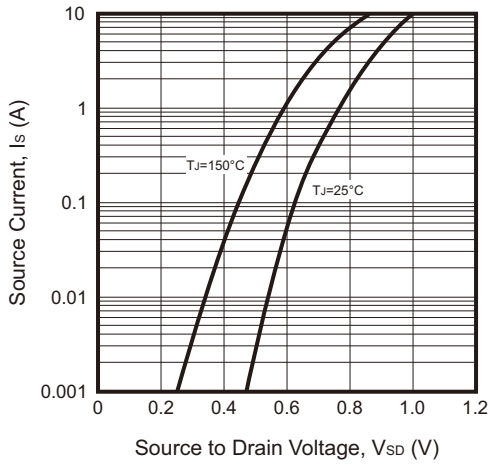
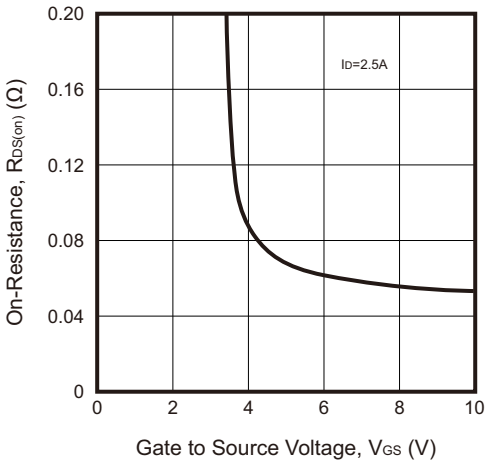


Fig.6 - On-Resistance vs. Gate to Source Voltage



Typical Rating and Characteristic Curves (ACMS2304T-HF)

Fig.7 - Gate Charge

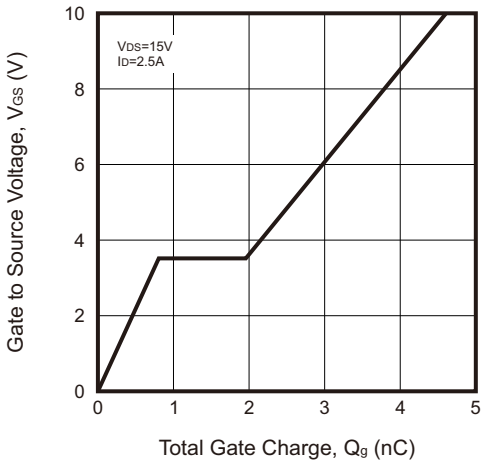


Fig.8 - On-Resistance vs. Junction Temperature

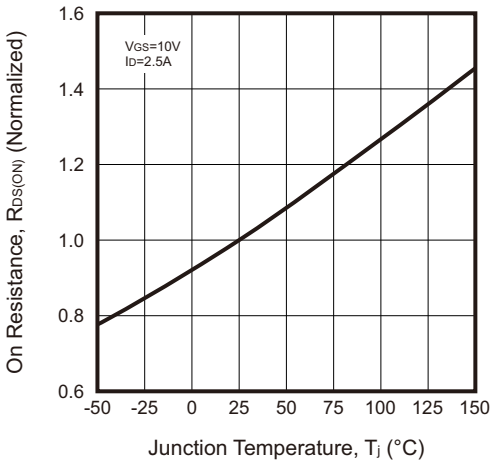


Fig.9 - Threshold Voltage

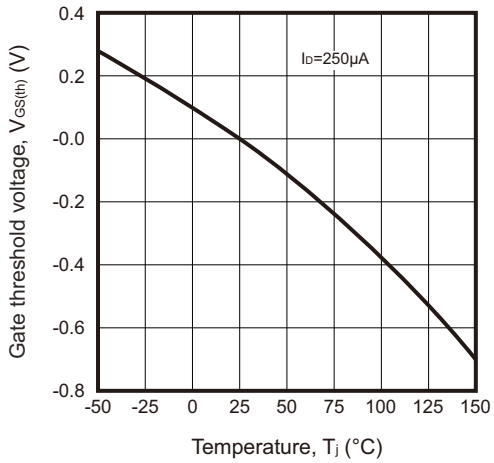
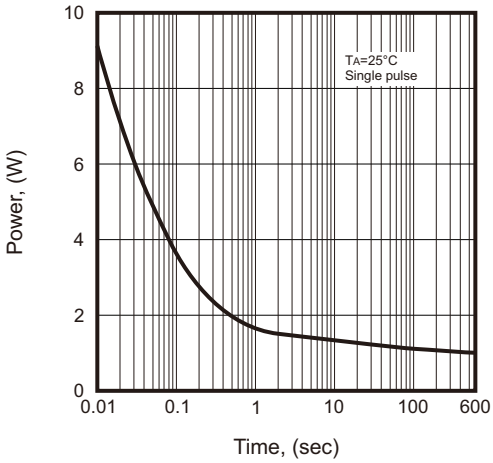
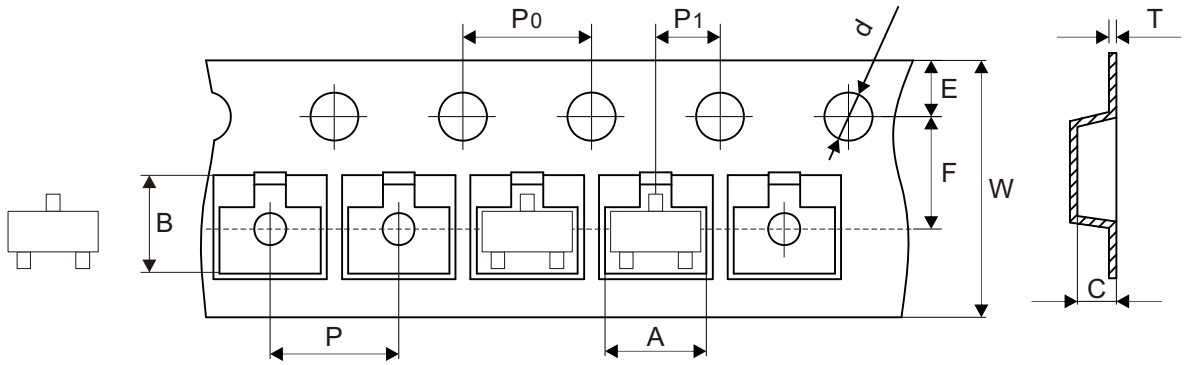
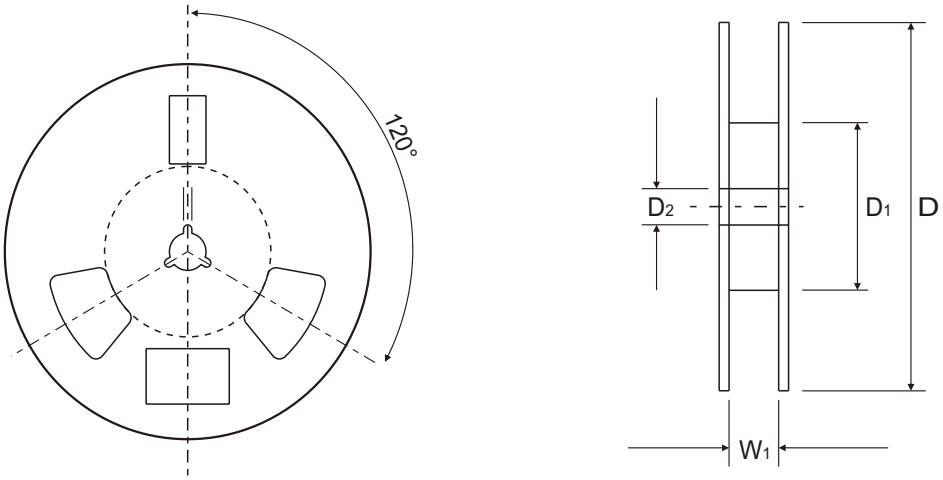


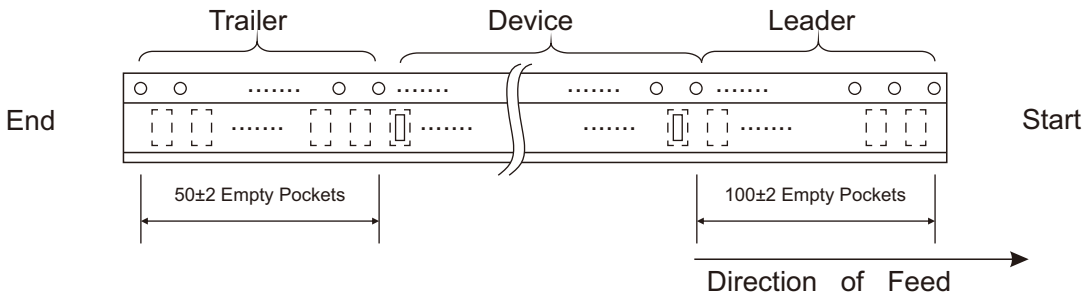
Fig.10 - Single Pulse Power



Reel Taping Specification





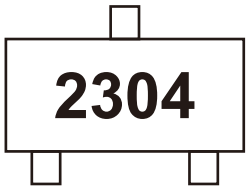


	SYMBOL	A	B	C	d	D	D1	D2
SOT-23	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	1.50 ± 0.10	178.00 ± 1.00	54.00 ± 0.50	13.00 ± 0.50
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 ± 0.004	0.059 ± 0.004	7.008 ± 0.039	2.126 ± 0.020	0.512 ± 0.020

	SYMBOL	E	F	P	P0	P1	T	W	W1
SOT-23	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.20 ± 0.02	8.00 ± 0.30	9.50 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.008 ± 0.001	0.315 ± 0.012	0.374 ± 0.039

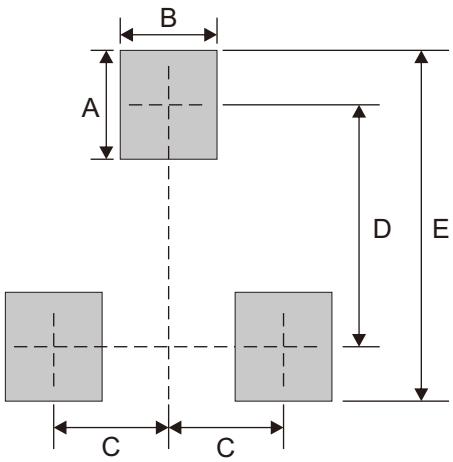
Marking Code

Part Number	Marking Code
ACMS2304T-HF	2304



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