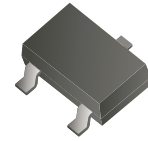


ACMS03N06T-HF

N-Channel

RoHS Device

Halogen Free



Features

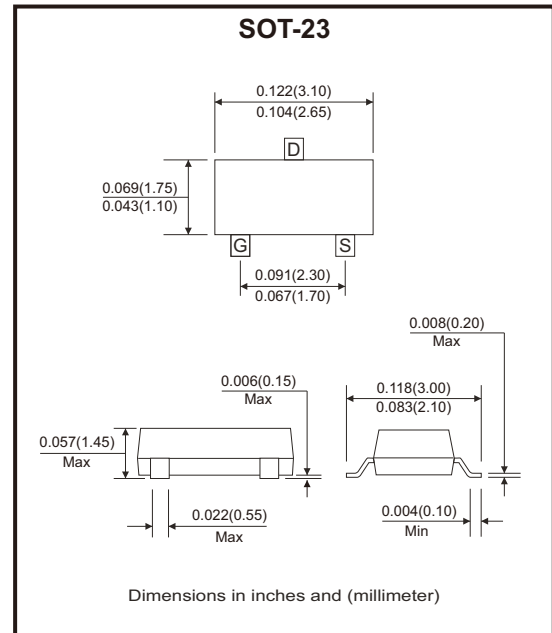
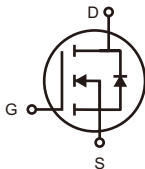
- Improved dv/dt capability.
- Fast switching.
- $R_{DS(ON)} \leq 100m\Omega @ V_{GS}=10V$.
- AEC-Q101 Qualified.

Mechanical data

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

Circuit Diagram

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



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

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	60	V
Gate-source voltage	V_{GS}	± 20	V
Drain current-continuous	I_D	3	A
Drain current-pulsed (Note 1)	I_{DM}	12	A
Power dissipation (Note 1)	P_D	1.5	W
Thermal resistance junction-ambient	$R_{\theta JA}$	83.3	°C/W
Operating junction temperature range	T_J	-55 to +150	°C
Storage temperature range	T_{STG}	-55 to +150	°C

Electrical Characteristics (at $T_J=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Off Characteristics						
Drain-source breakdown voltage	BV _{DSS}	V _{GS} = 0V, I _D = 250μA	60			V
Drain-source leakage current	I _{DSS}	V _{DS} = 48V, V _{GS} = 0V			1	μA
Gate-source leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
On Characteristics						
Static drain-source on-resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 2A			100	mΩ
		V _{GS} = 4.5V, I _D = 1A			110	
Gate threshold voltage	V _{GS(th)}	V _{GS} = V _{DS} , I _D = 250μA	1.0		2.5	V
Dynamic and Switching Characteristics (Note 3)						
Total gate charge	Q _g	V _{DS} = 30V, V _{GS} = 4.5V, I _D = 2A		7		nC
Gate-source charge	Q _{gs}			1.2		
Gate-drain charge	Q _{gd}			1.5		
Turn-on delay time	t _{d(on)}	V _{DD} = 30V, V _{GS} = 10V, R _{GEN} = 1Ω, I _D = 2A		6.5		nS
Rise time	t _r			15.2		
Turn-off delay time	t _{d(off)}			15.2		
Fall time	t _f			10.3		
Input capacitance	C _{iss}	V _{DS} = 30V, V _{GS} = 0V, f = 1MHz		515		pF
Output capacitance	C _{oss}			26		
Reverse transfer capacitance	C _{rss}			20		
Drain-Source Diode Characteristics and Ratings						
Continuous source current	I _S				3	A
Diode forward voltage	V _{SD}	V _{GS} = 0V, I _S = 1A			1.2	V

Notes: 1. Pulse width limited by maximum junction temperature.

2. The data tested by pulsed, pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

3. This value is guaranteed by design hence it is not included in the production test.

Rating and Characteristic Curves (ACMS03N06T-HF)

Fig.1 - Drain Current

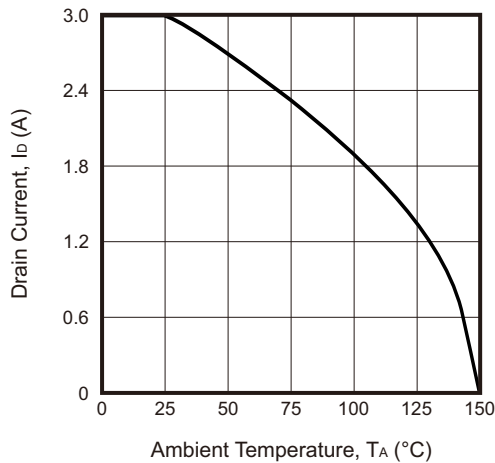


Fig.2 - Normalized $V_{GS(th)}$ vs. T_J

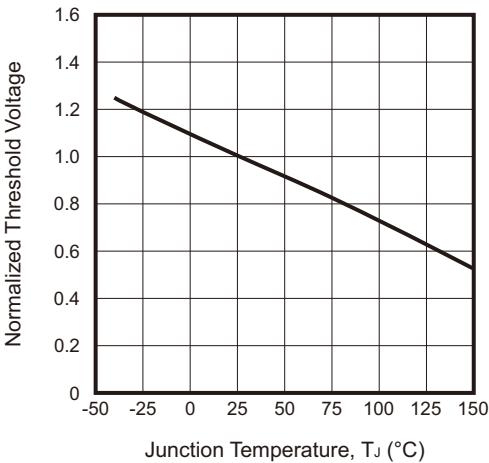


Fig.3 - Normalized $R_{DS(on)}$ vs. T_J

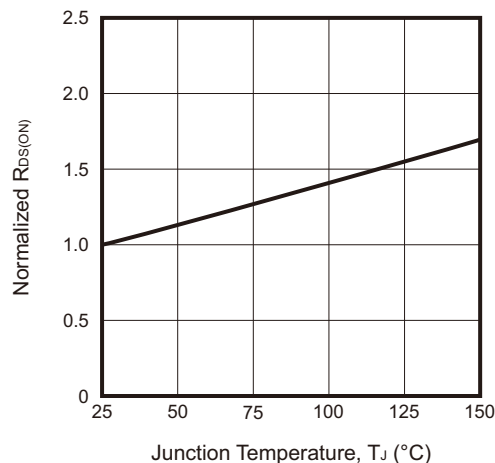


Fig.4 - Gate Charge Characteristics

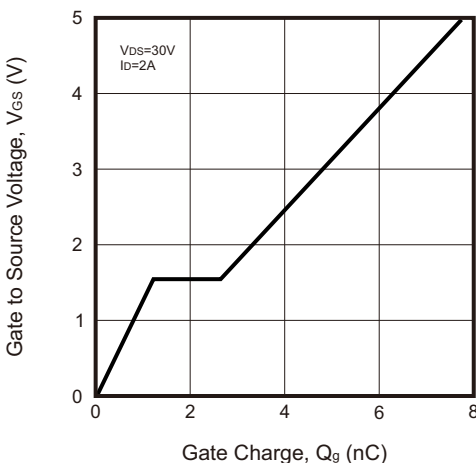


Fig.5 - Transfer Characteristics

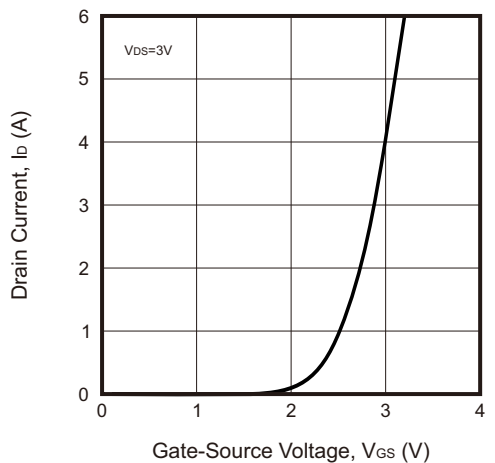
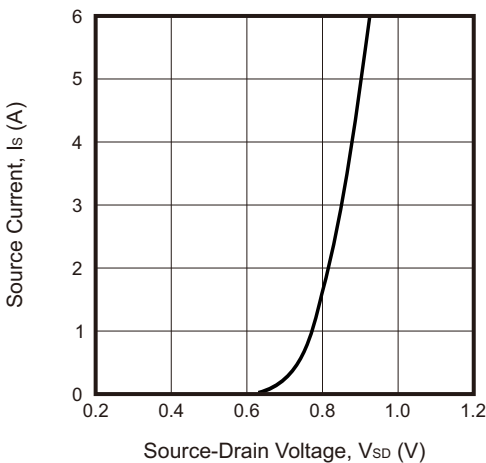
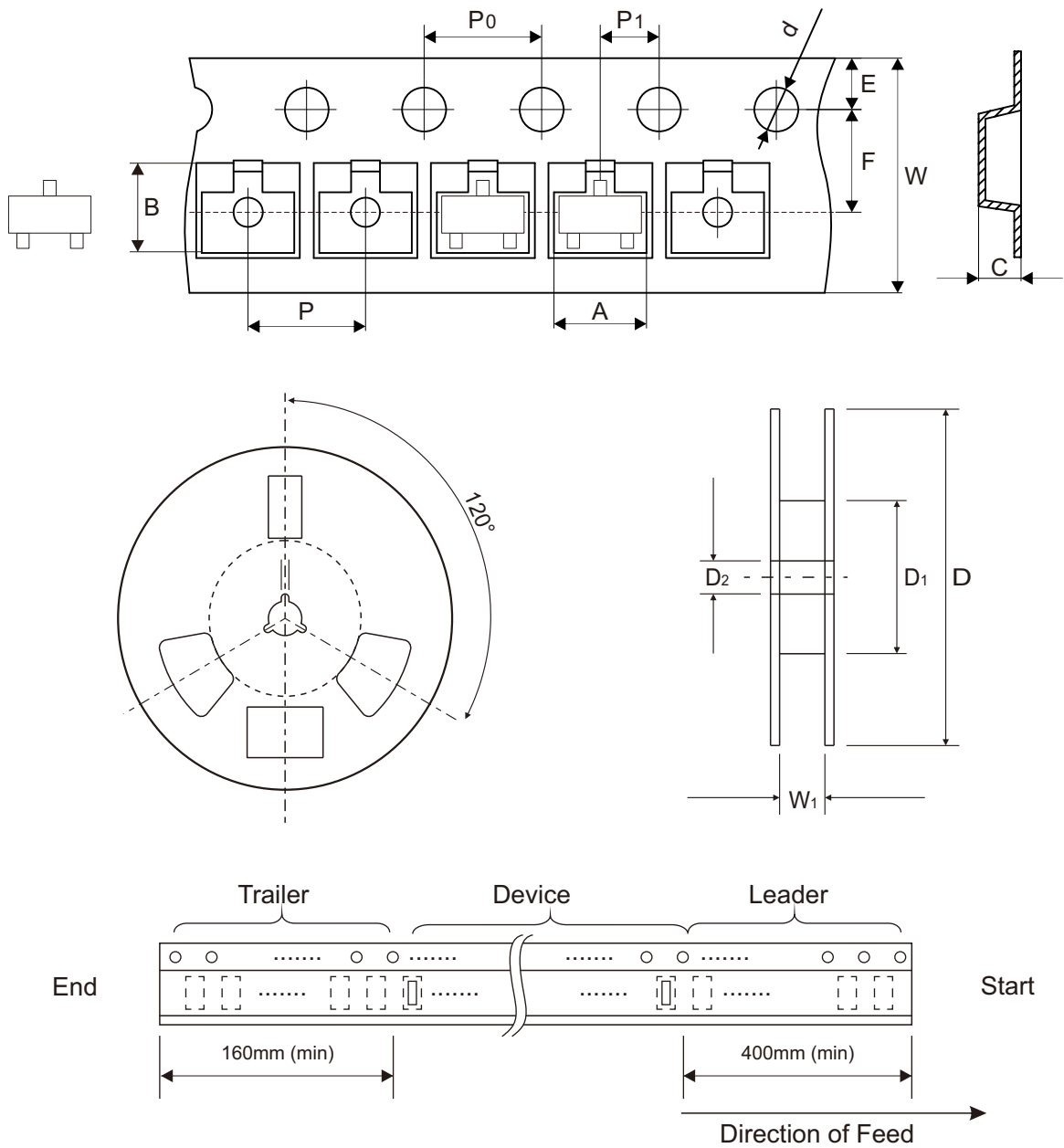


Fig.6 - Forward Characteristics



Reel Taping Specification

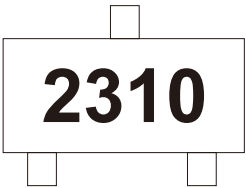


SOT-23	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.15 ± 0.25	2.95 ± 0.35	1.35 ± 0.25	1.50 ± 0.10	178.00 ± 2.00	49.00 Min	13.00 ± 0.50
	(inch)	0.124 ± 0.010	0.116 ± 0.014	0.053 ± 0.010	0.059 ± 0.004	7.008 ± 0.079	1.929 Min	0.512 ± 0.020

SOT-23	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	8.00 ± 0.30	9.80 ± 1.80
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.315 ± 0.012	0.386 ± 0.071

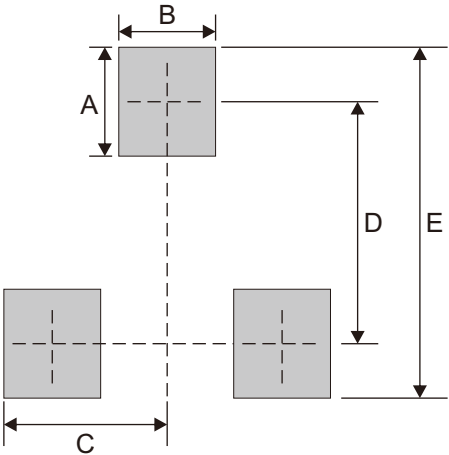
Marking Code

Part Number	Marking Code
ACMS03N06T-HF	2310



Suggested P.C.B. PAD Layout

SIZE	SOT-23	
	(mm)	(inch)
A	0.90	0.035
B	0.80	0.031
C	1.35	0.053
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