P-Channel Enhancement MOSFET

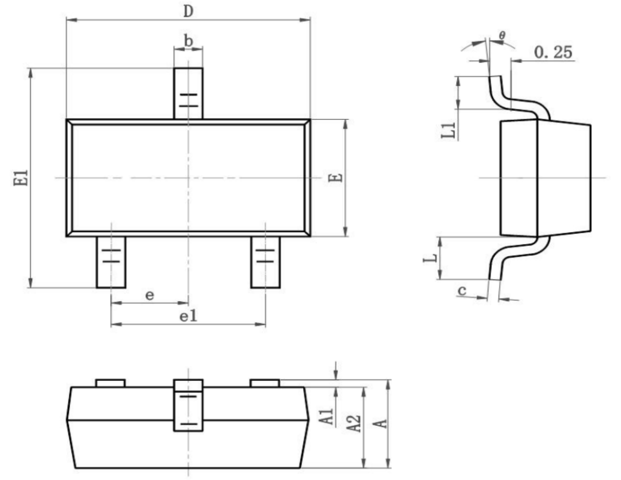
Primary characteristics

Parameter	**Symbol**	**Value**	**Unit**
Drain-source voltage	BV_{DSS}	-15	V
Drain current (continuous)	I_D	-5.6	A
Total device dissipation	P_D	1200	mW

Features

- SOT-23 small outline plastic package.

Case dimensions



SOT-23

Unit		**A**	**A1**	**A2**	**b**	**c**	**D**	**E**	**E1**	**e**	**e1**	**L**	**L1**	**θ**
mm	**Min.**	0.9	0.0	0.9	0.3	0.08	2.8	1.2	2.25	0.9	1.8	0.5	0.3	0°
	Max.	1.15	0.1	1.05	0.5	0.15	3.0	1.4	2.55	1.0	2.0	0.6	0.5	8°
mil	**Min.**	35	0	35	12	3	110	50	89	35	71	20	12	0°
	Max.	45	4	41	20	6	118	55	100	39	79	24	20	8°

Absolute maximum ratings (T_A=25°C unless otherwise specified)

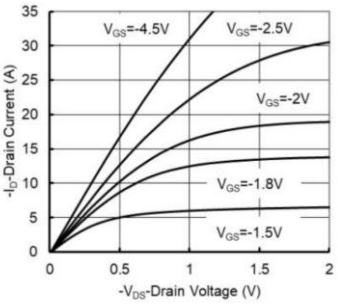
Characteristic	**Symbol**	**Value**	**Unit**
Drain-source voltage	BV_{DSS}	-15	V
Gate-source voltage	V_{GS}	±10	V
Drain current (continuous)	I_D	-5.6	A
Drain current (pulsed)	I_{DM}	-23	A
Total device dissipation	P_D	1200	mW
Thermal resistance junction-ambient	$R_{\theta JA}$	104	°C/W
Junction/storage temperature	T_J,T_{stg}	-55~150	°C

Electrical characteristics (T_A = 25°C unless otherwise specified)

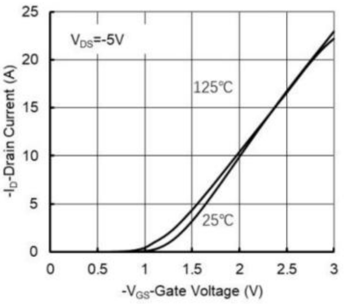
Characteristic	**Test condition**	**Symbol**	**Value**			**Unit**
			Min.	**Typ.**	**Max.**	
Drain-source breakdown voltage	I_D=-250µA, V_{GS}=0V	BV_{DSS}	-15	-	-	V
Gate threshold voltage	I_D=-250µA, V_{GS}=V_{DS}	$V_{GS(th)}$	-0.4	-0.62	-1	V
Zero gate voltage drain current	V_{GS}=0V, V_{DS}=-15V	I_{DSS}	-	-	1	µA
Gate body leakage	V_{GS}=±12V, V_{DS}=0V	I_{GSS}	-	-	±100	nA
Static drain-source on-state resistance	I_D=-5A, V_{GS}=-4.5V	$R_{DS(on)}$	-	25	36	mΩ
	I_D=-4A, V_{GS}=-2.5V		-	32	53	
	I_D=-3A, V_{GS}=-1.8V		-	44	70	
Diode forward voltage drop	I_{SD}=-5A, V_{GS}=0V	V_{SD}	-	-	-1.2	V
Input Capacitance	V_{GS}=0V, V_{DS}=-10V, f=1MHz	C_{ISS}	-	1010	-	pF
Common source output capacitance		C_{OSS}	-	135	-	
Reverse transfer capacitance		C_{RSS}	-	109	-	
Total gate charge	V_{DS}=-10V, I_D=-4A, V_{GS}=-4.5V	Q_g	-	11	-	nC
Gate-source charge		Q_{gs}	-	2	-	
Gate-drain charge		Q_{gd}	-	2	-	
Turn-ON delay time	V_{GS}=-4.5V, V_{DS}=-10V, I_D=-1A , R_{GEN}=2.5Ω	$t_{d(on)}$	-	8	-	ns
Turn-ON rise time		t_r	-	36	-	
Turn-OFF delay time		$t_{d(off)}$	-	78	-	
Turn-OFF Fall time		t_f	-	55	-	

Typical characteristic curves

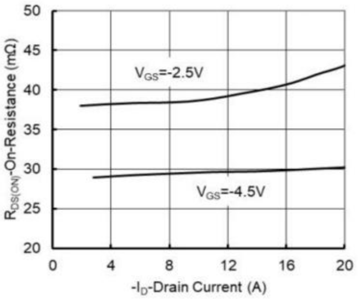
Output characteristics



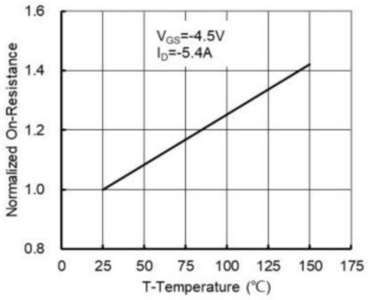
Transfer characteristics



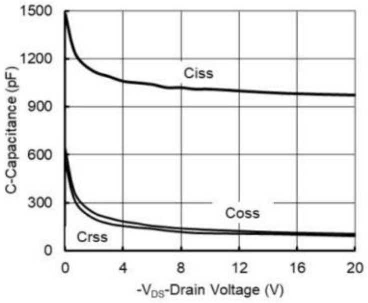
On-resistance vs. Drain current



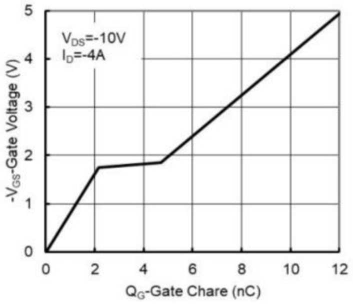
On-resistance vs. Temperature



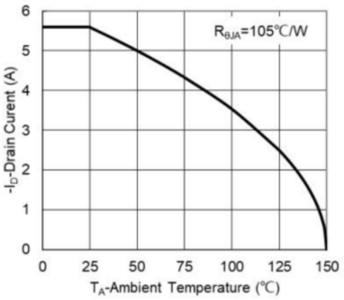
Capacitance characteristics



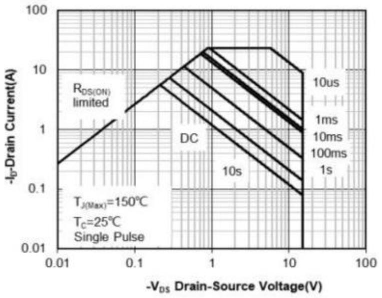
Gate-charge characteristics



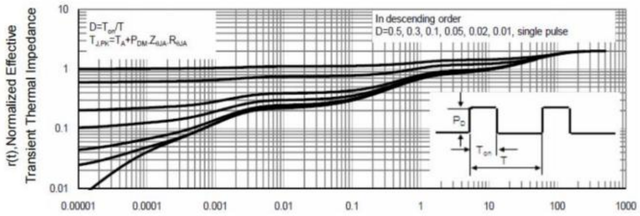
Drain current vs. Temperature



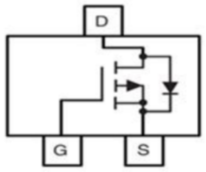
Safe operating area



Transient Thermal Response Curve



Pinning



Ordering information

Part Number	Package	Shipping Quantity	Dimensions
AK2333M-6AF	SOT-23	**3 000 pcs / reel**	---

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