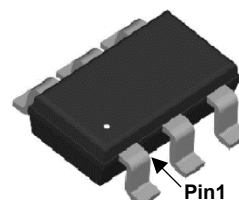


30V_{DS}/±12V_{GS} N-Channel Power MOSFET

Features

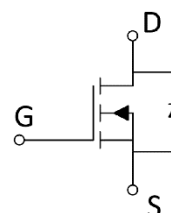
- $V_{DS}=30V, I_D=7A$
- $R_{DS(ON)}=28m\Omega$ (TYP.) $V_{GS}=10V$
- $R_{DS(ON)}=36m\Omega$ (TYP.) $V_{GS}=4.5V$
- ESD Rating:2KV HBM
- Low On-Resistance

SOT23-6L



Applications

- Switch switching
- Power management in portable/desktop PCs



Ordering Information

Device	package	Device Marking	Package Qty.
AO6400	SOT-23-6	*	3000/PCS

Absolute Maximum Ratings (T_C=25°C, unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage (V _{GS} =0V)	V _{DS}	30	V
Gate-Source Voltage (V _{GS} =0V,static)	V _{GS}	±12	V
Continuous Drain Current (T _C =25°C)	I _D	7	A
Continuous Drain Current (T _C =100°C)		5.7	A
Pulesd Drain Current	I _{DM}	25	A
Maximum Power Dissipation (T _C =25°C)	P _D	1.4	W
Maximum Power Dissipation (T _C =100°C)		0.9	W
Operating,Storage Temperature Range	T _J ,T _{STG}	-55~150	°C

Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance,Junction-to-Case	R _{θJC}	-	68	-	°C/ W
Thermal Resistance,Junction-to-Ambient	R _{θJA}	-	105	-	°C/ W

Electrical Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	30	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$	-	-	1	μA
Gate -Source Leakage Current	I_{GSS}	$V_{GS}=\pm 8V, V_{DS}=0V$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.4	0.8	1.1	V
Drain-Source On-stage Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=7A$	-	22	30	m Ω
		$V_{GS}=4.5V, I_D=5.5A$	-	28	40	

Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Input capacitance	C_{iss}	$V_{DS}=10V$ $V_{GS}=0V$ $f=1MHz$	-	650	-	pF
Output capacitance	C_{oss}		-	75	-	
Reverse transfer capacitance	C_{rss}		-	30	-	
Total Gate Charge	Q_g	$V_{DS}=10V$ $V_{GS}=4.5V$ $I_D=7A$	-	14	-	nC
Gate Source Charge	Q_{gs}		-	4.2	-	
Gate Drain Charge	Q_{gd}		-	2.6	-	
Turn-on delay Time	$t_{d(on)}$	$V_{GS}=4.5V$ $V_{DS}=10V$ $R_L=1.54\Omega$ $R_G=3\Omega$	-	270	-	ns
Rise time	t_r		-	320	-	
Turn-off delay Time	$t_{d(off)}$		-	3	-	
Fall time	t_f		-	2.2	-	

Reverse Diode Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Body Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_{SD}=1A$	-	0.75	1	V
Reverse Recovery Time	t_{rr}	$V_{GS}=0V, I_{SD}=7A$ $d_i/d_t=100A/\mu s$	-	30	-	ns
Reverse Recovery Charge	Q_{rr}		-	6.5	-	nC

Electrical Characteristics Diagrames

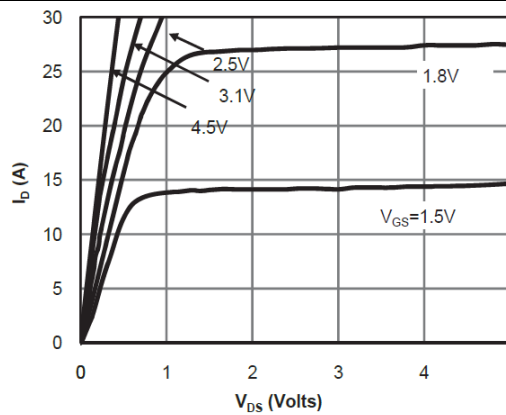
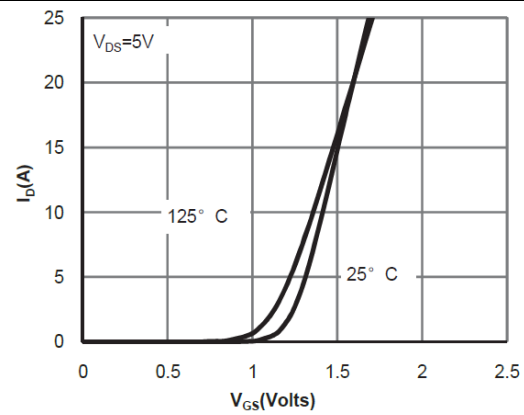
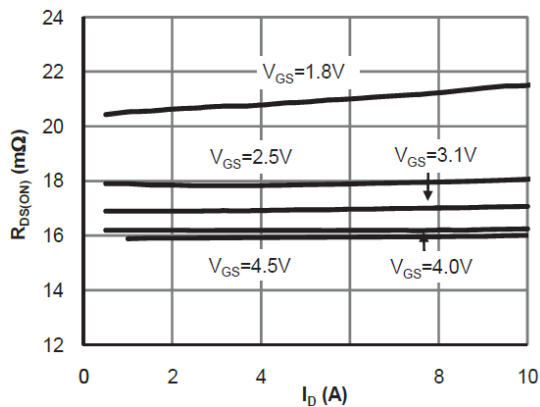
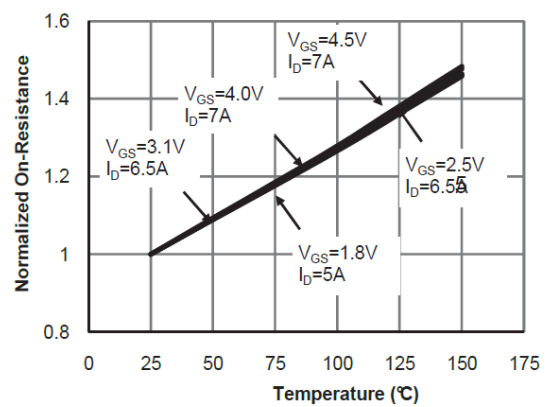
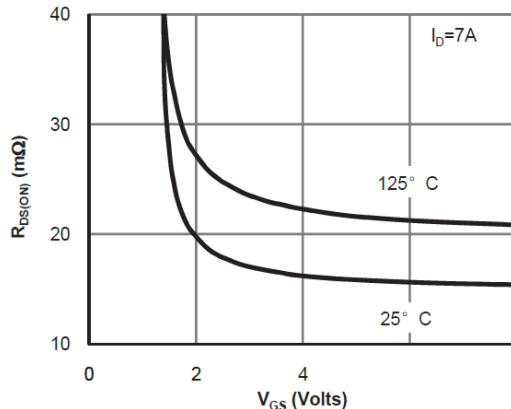
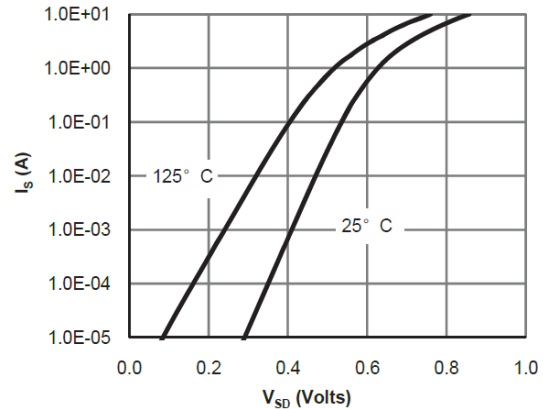
Figure 1. On-Regin Characteristics

Figure 2. Transfer Characteristics

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

Figure 4. On-Resistance vs. Junction Temperature

Figure 5. On-Resistance vs. Gate-Source Voltage

Figure 6. Body-Diode Characteristics


Figure 7. Gate-Charge Characteristics

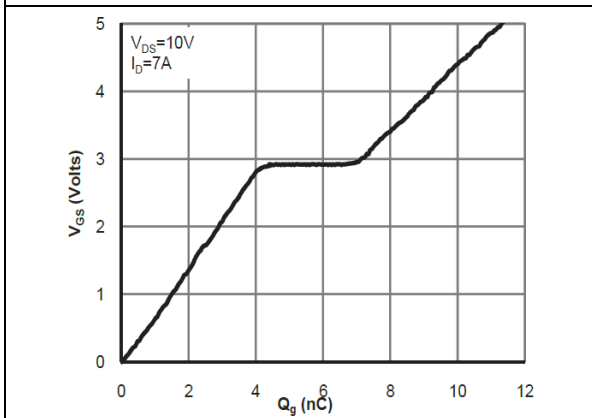


Figure 8. Capacitance Characteristics

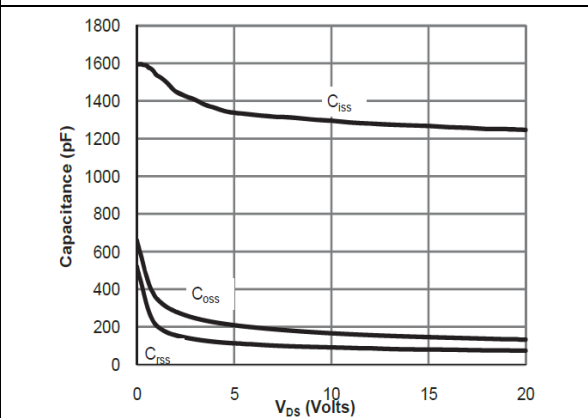


Figure 9. Maximum Forward Biased Safe Operating Area

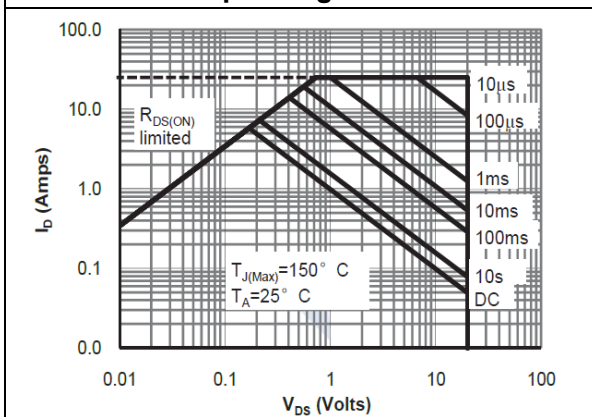


Figure 10. Single Pulse Power Rating Junction-to-Ambient

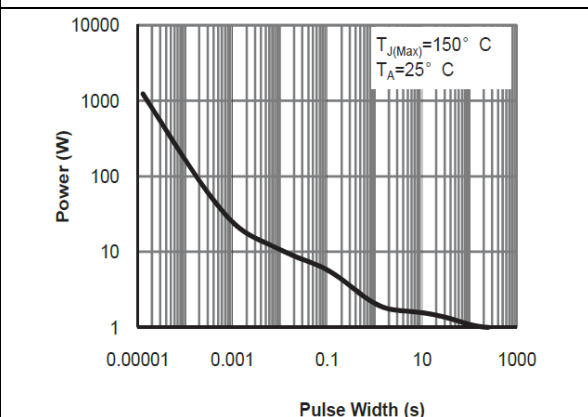
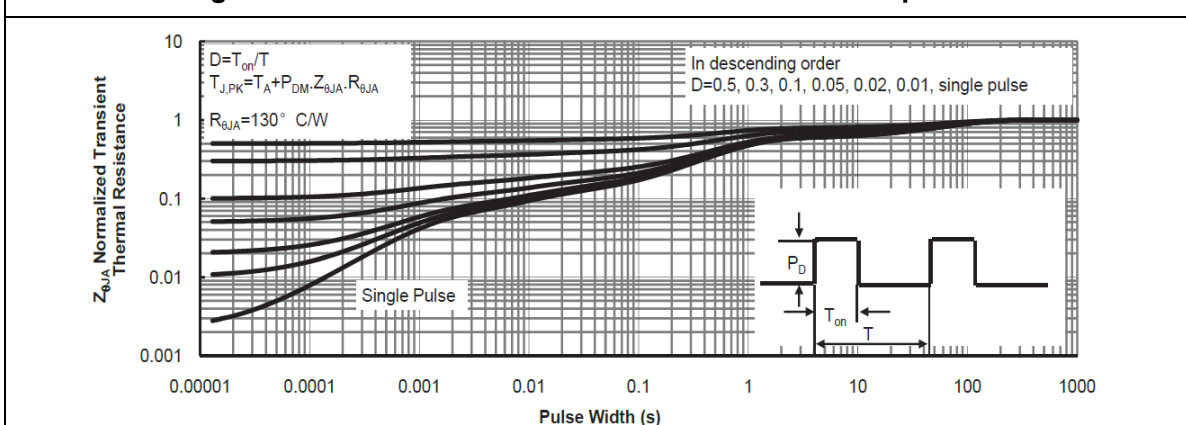
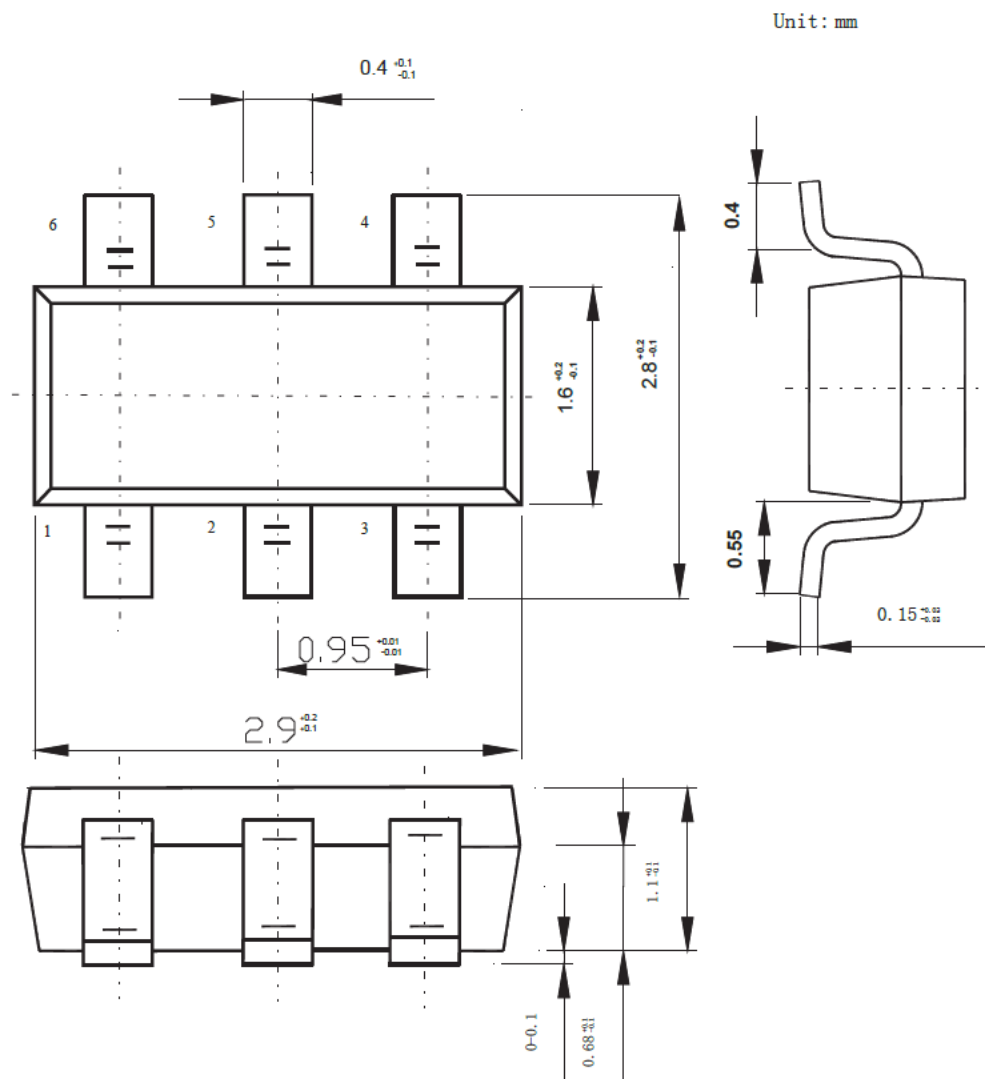


Figure 11. Normalized Maximum Transient Thermal Impedance



Physical Dimensions

SOT23-6L



< Copyright >

All the Patent, Copyright and IP contained in this document belong to ALE, shall not be reproduced , copied, or used in other ways without permission.