N-Channel 30V(D-S) MOSFET

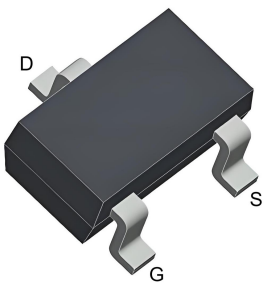
Product summary		
V_{DS}	30	V
$R_{DS(ON)}$(at V_{GS}=10V) Typ.	21	mΩ
$R_{DS(ON)}$(at V_{GS}=4.5V) Typ.	25	mΩ
$R_{DS(ON)}$(at V_{GS}=2.5V) Typ.	33	mΩ
I_D(Tc=25℃)	5.6	A

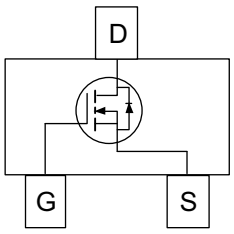
Features
- Fast switching speed
- Low gate charge
- RoHS and Halogen-Free compliant

Applications
- Load switch
- Power management

Pin Configuration

SOT23-3L





Packing Information

Device	Marking	Reel Size	Tape Width	Quantity
ECG3400A	3400	7'	8mm	3000pcs

Absolute Maximum Ratings (at TA=25℃ Unless Otherwise Noted)

Symbol	Parameter		Rating	Units
V_{DS}	Drain-Source Voltage		30	V
V_{GS}	Gate-Source Voltage		±12	V
I_D	Continuous Drain Current at V_{GS}=10V	T_C=25℃	5.6	A
		T_C=70℃	4.9	A
I_{DM}	Pulse Drain Current Tested		30	A
P_D	Power Dissipation	T_C=25℃	1.2	W
T_J,T_{STG}	Junciton and Storage Temperature Range		-55 to 150	℃

Thermal Characteristics

Symbol	Parameter	Typical	Units
$R_{\theta JA}$	Thermal Resistance-Junction to ambient	87	℃/W

Electrical Characteristics (at TJ =25℃ Unless Otherwise Noted)

Symbol	Parameter	Condition	Min.	Typ.	Max.	Units
Static Parameters						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D=250uA	30	33	--	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=30V,V_{GS}=0V	--	--	1	uA
I_{GSS}	Gate-Body Leakage Current	V_{DS}=0V,V_{GS}=±12V	--	--	±100	nA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=250uA	0.7	0.9	1.5	V
$R_{DS(ON)}$	Drain-Source On-State Resistance	V_{GS}=10V,I_D=5.8A	--	21	27	mΩ
		V_{GS}=4.5V,I_D=3A	--	25	33	mΩ
		V_{GS}=2.5V,I_D=2A	--	33	51	mΩ
V_{SD}	Forward Voltage	I_{SD}=1A,V_{GS}=0V	--	--	1.2	V
Dynamic Parameters						
C_{iss}	Input Capacitance	V_{GS}=0V,V_{DS}=15V f=1MHZ	--	535	--	pF
C_{oss}	Output Capacitance		--	94	--	pF
C_{rss}	Reverse Transfer Capacitance		--	72	--	pF
Q_g	Total Gate Charge	V_{DS}=15V,I_D=5A V_{GS}=4.5V	--	13	--	nC
Q_{gs}	Gate-Source Charge		--	2.1	--	nC
Q_{gd}	Gate-Drain Charge		--	3.9	--	nC
Switching Parameters						
$t_{D(on)}$	Turn-on Delay Time	V_{DD}=15V,RL=2.7Ω R_G=3Ω,V_{GS}=10V	--	4.5	--	nS
t_r	Turn-on Rise Time		--	5.7	--	nS
$t_{D(off)}$	Turn-off Delay Time		--	24	--	nS
t_f	Turn-off Fall Time		--	7	--	nS

Typical Characteristics

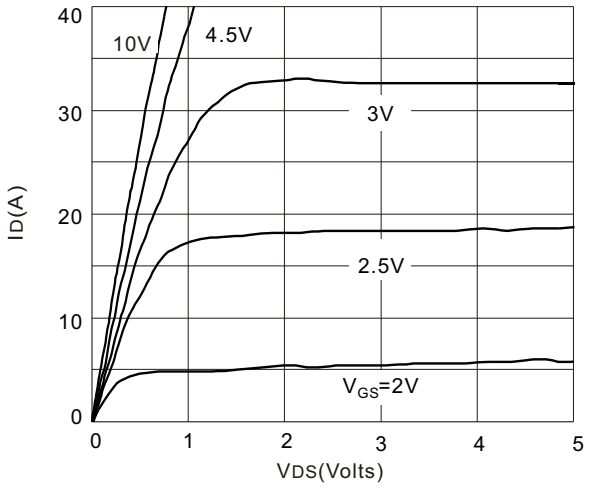


Figure 1: On-Region Characteristics

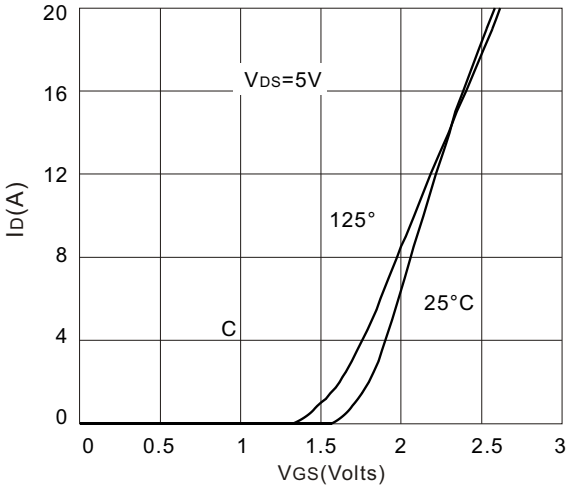


Figure 2: Transfer Characteristics

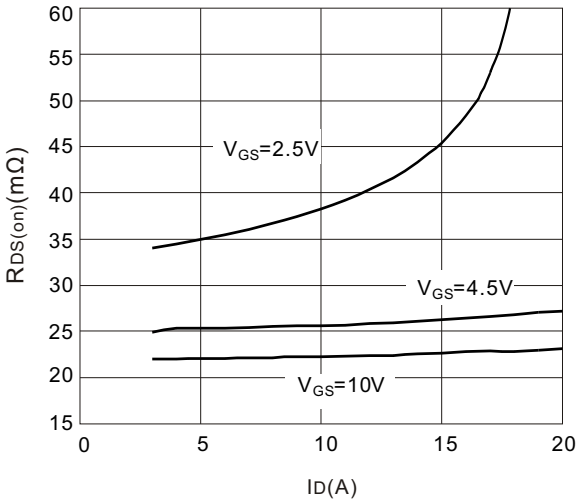


Figure3: On-Resistance vs,Drain Current and Gate Voltage

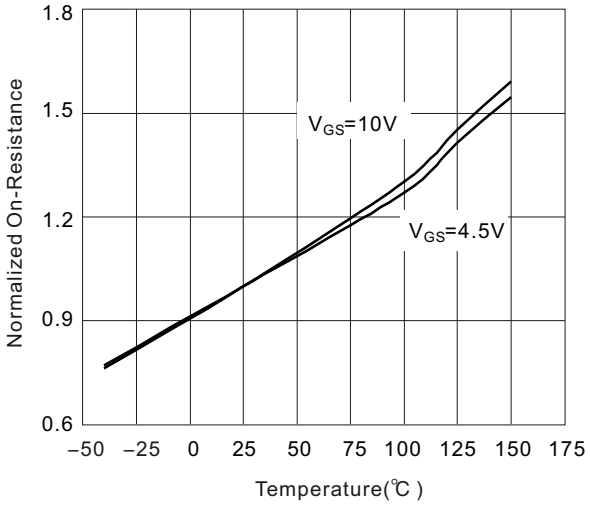


Figure4: On-Resistance vs.Junction Temperature

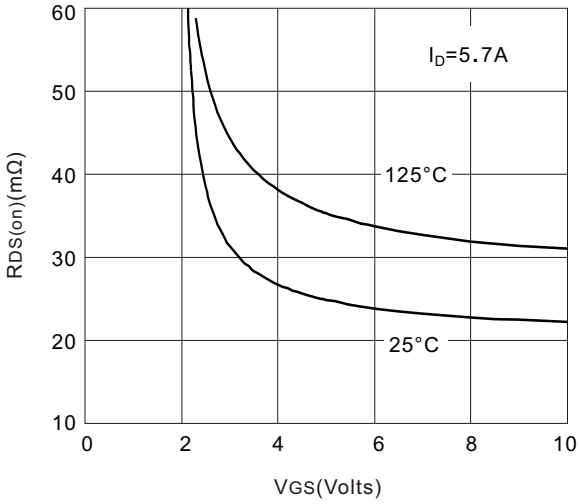


Figure 5:On-Resistance vs.Gate-Source Voltage

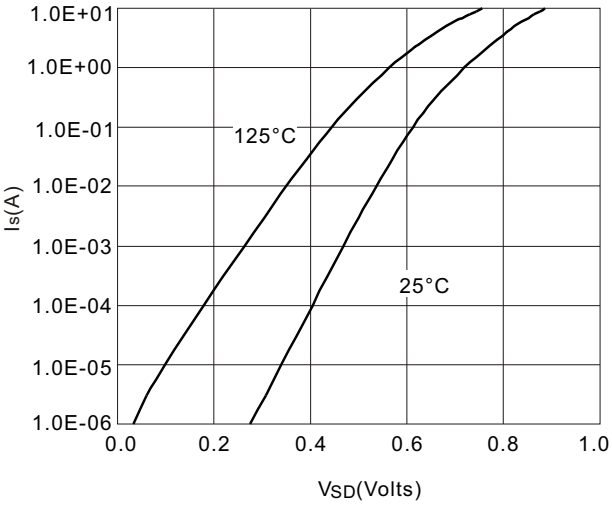


Figure 6: Body-Diode Characteristics

Typical Characteristics

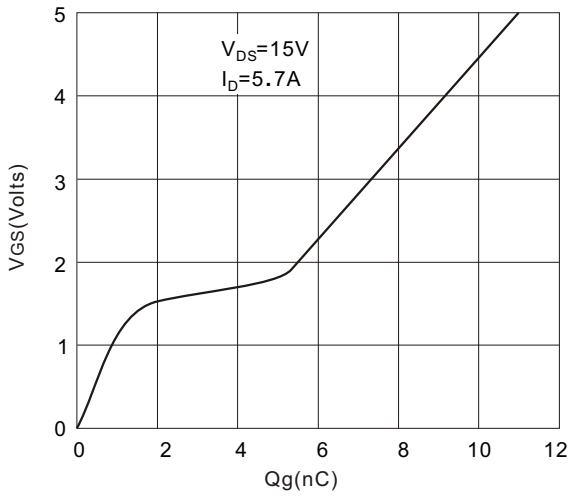


Figure 7: Gate-Charge Characteristics

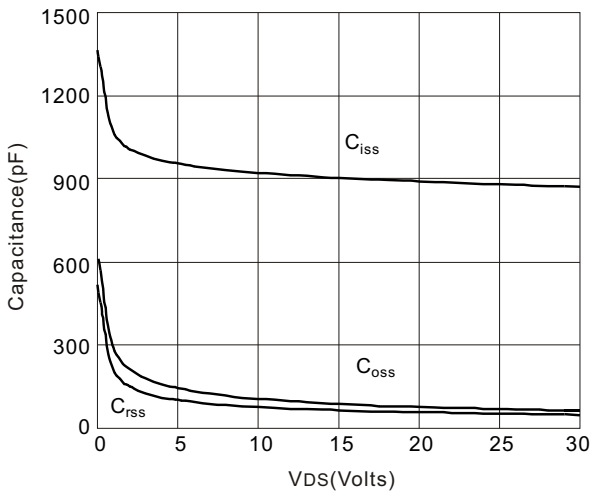


Figure 8: Capacitance Characteristics

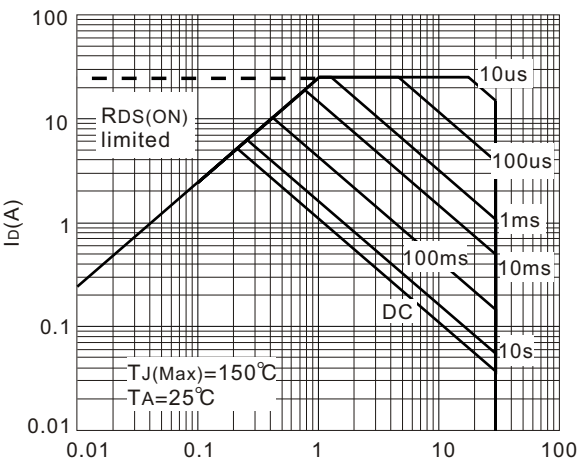


Figure9: Threshold Voltage

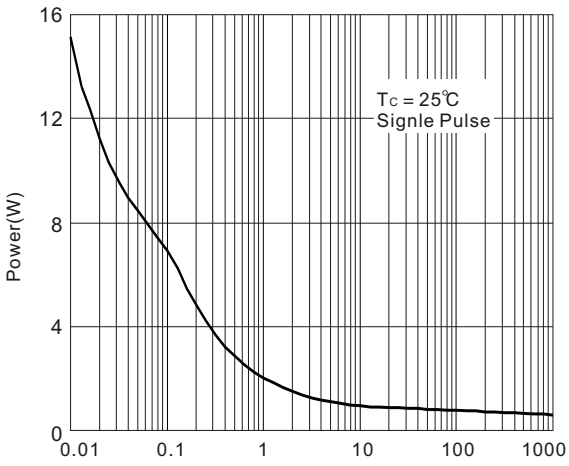


Figure10: Single Pluse Power

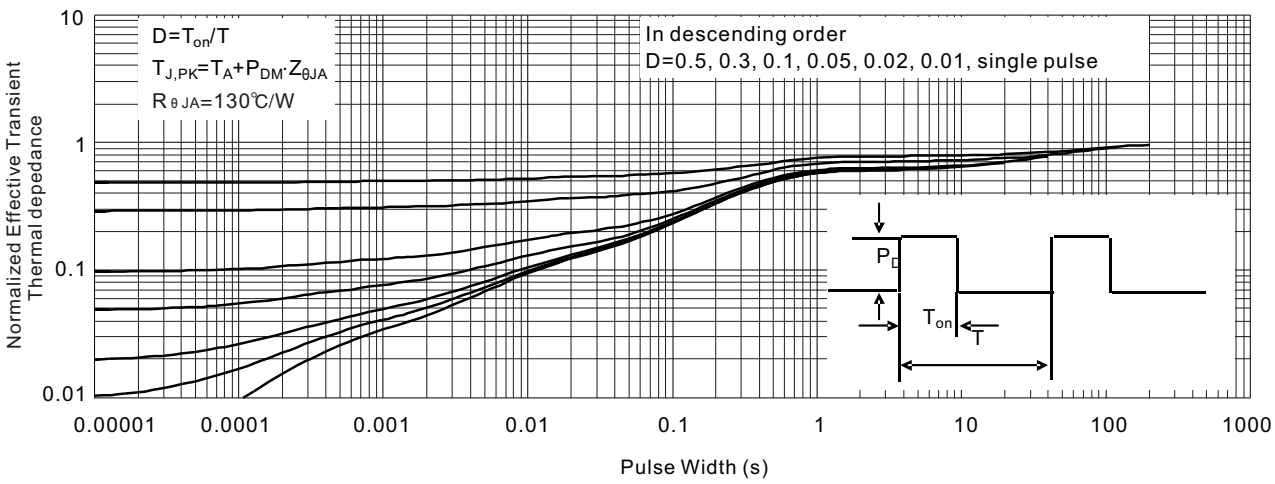
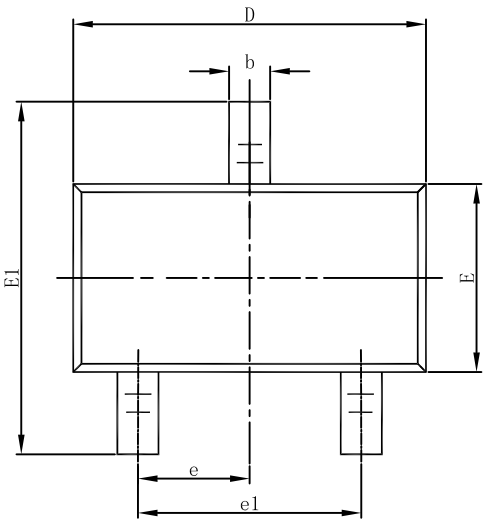
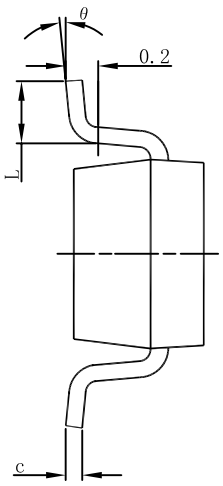


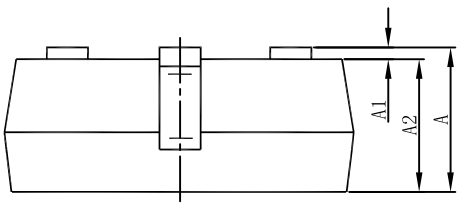
Figure 11: Normalized Maximum Transient Thermal Impedance

SOT23-3L Package Information



Top View





Side View

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°