



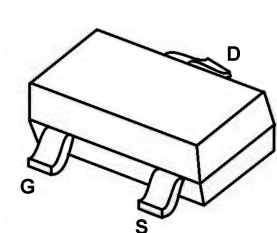
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	10mΩ@10V	8A
	14mΩ@4.5V	

Feature

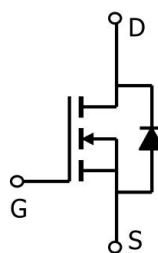
- $V_{DS} = 30V, I_D = 8A$
 $R_{DS(ON)} < 15m\Omega @ V_{GS} = 10V$
 $R_{DS(ON)} < 22m\Omega @ V_{GS} = 4.5V$
- Low Input Capacitance
- Low On-Resistance
- Fast Switching Speed

Package

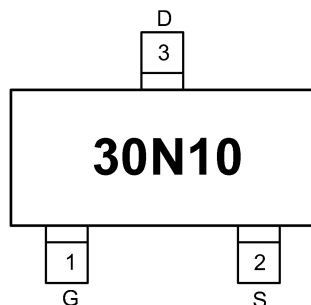


SOT-23-3L

Circuit diagram



Marking



30N10 : Product code

Absolute maximum ratings (Ta=25°C unless otherwise noted)

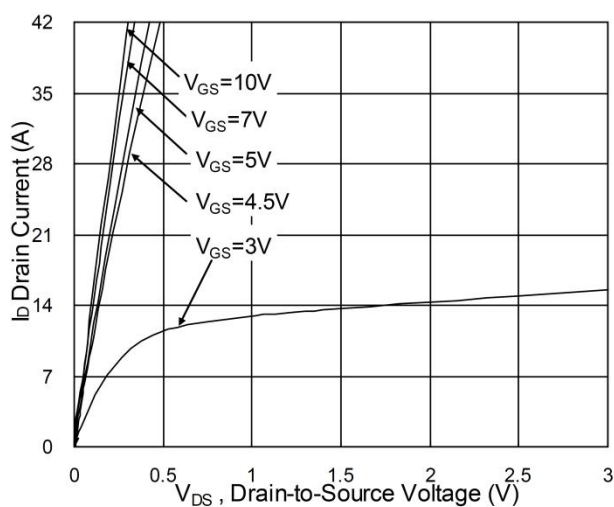
Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	8	A
Pulsed Drain Current	I_{DM}	32	A
Maximum Power Dissipation(Tc=25°C)	P_D	1.4	W
Thermal Resistance,Junction-to-Case	$R_{\theta Jc}$	90	°C/W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 150	°C

Electrical characteristics (Ta=25°C, unless otherwise noted)

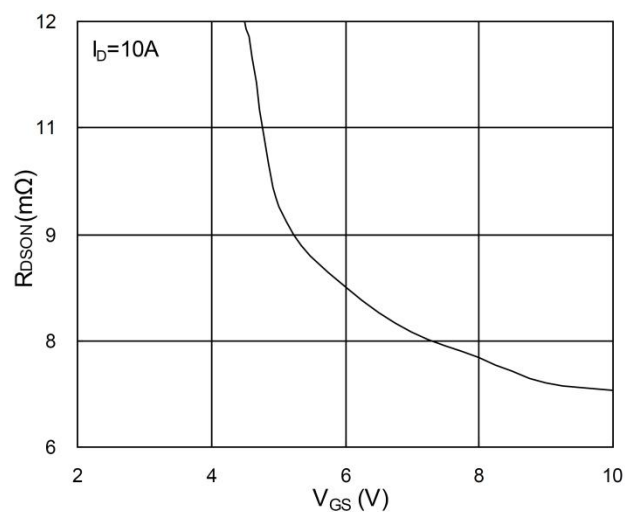
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =250μA	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.5	2.2	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =5A		10	15	mΩ
		V _{GS} =4.5V, I _D =4A		14	22	mΩ
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1.0MHz		1317		pF
Output Capacitance	C _{oss}			163		pF
Reverse Transfer Capacitance	C _{rss}			131		pF
Switching Times						
Turn-on Delay Time	t _{d(on)}	V _{GS} =10V, V _{DS} =15V, I _D =10A, R _{GEN} =3.3Ω		6.2		nS
Turn-on Rise Time	t _r			59		nS
Turn-Off Delay Time	t _{d(off)}			27.6		nS
Turn-Off Fall Time	t _f			8.4		nS
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =25V, I _D =12A		12.6		nC
Gate-Source Charge	Q _{gs}			4.2		nC
Gate-Drain Charge	Q _{gd}			5.1		nC
Source-Drain Diode Characteristics						
Gate-Drain Charge	V _{SD}	V _{GS} =0V, I _S =1A			1.2	V



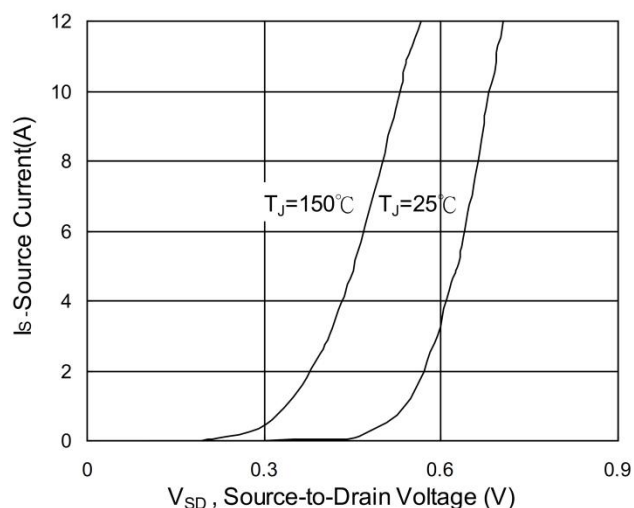
Typical Characteristics



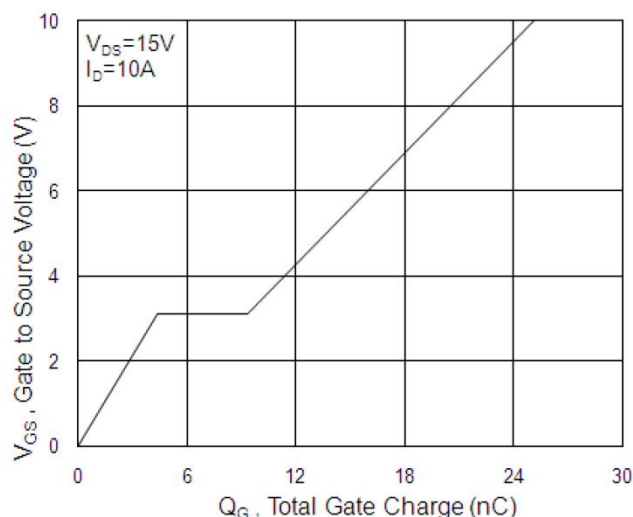
Typical Output Characteristics



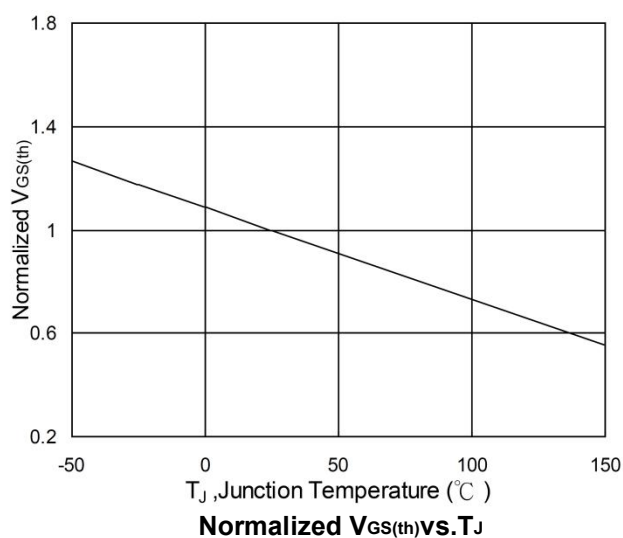
On-Resistance vs. Gate-Source



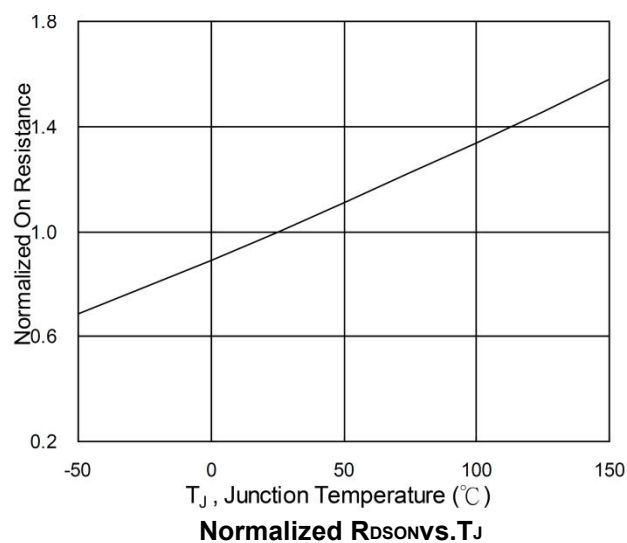
Forward Characteristics of reverse



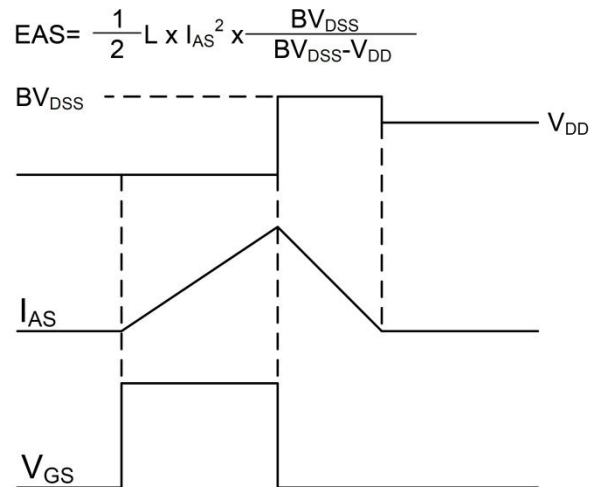
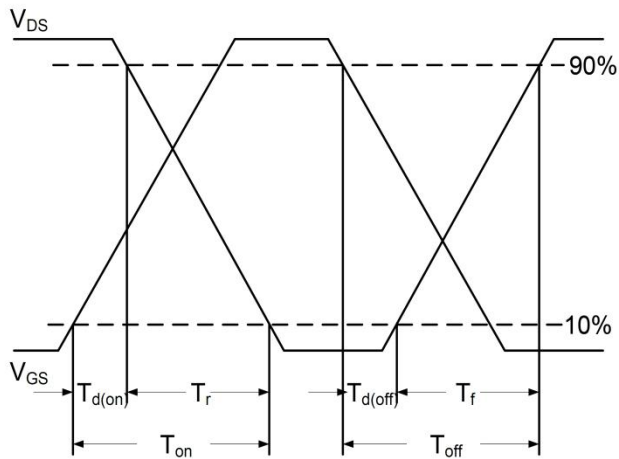
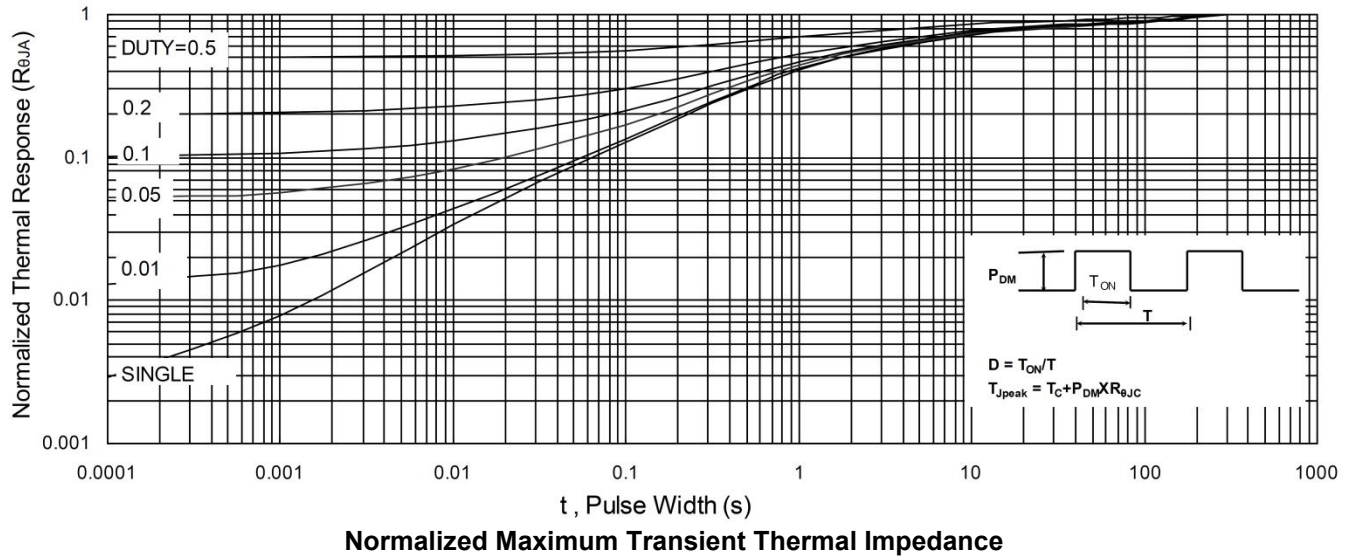
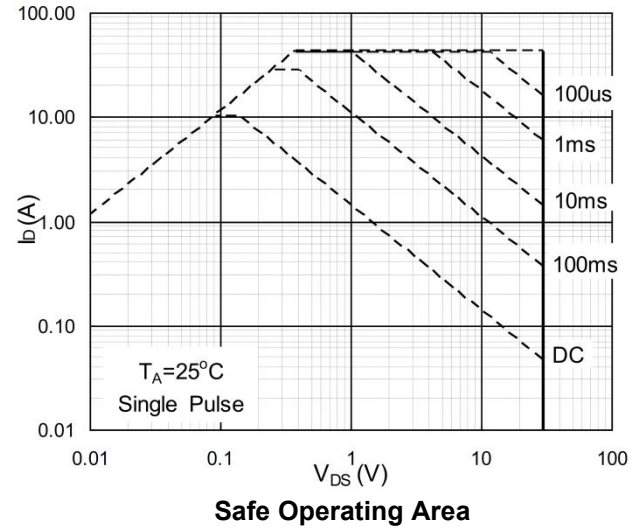
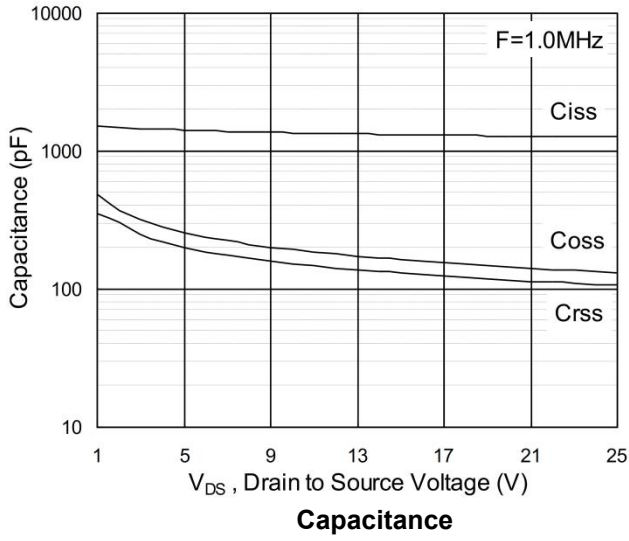
Gate-Charge Characteristics



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

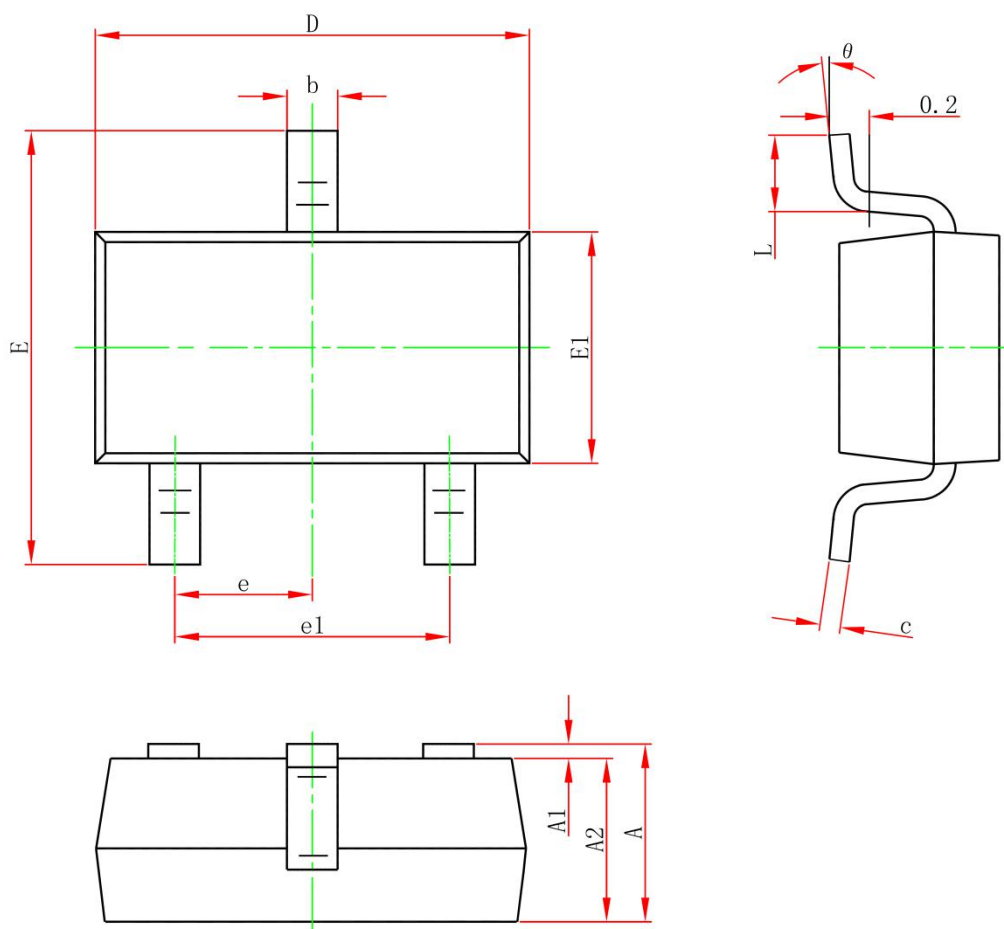


Normalized $R_{DS(on)}$ vs. T_J





SOT-23-3L Package Information



Symbol	Dimensions in millimeters	
	Min.	Max.
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
b	0.300	0.500
c	0.100	0.200
D	2.820	3.020
E1	1.500	1.700
E	2.650	2.950
e	0.950 Typ.	
e1	1.800	2.000
L	0.300	0.600
θ	0°	8°