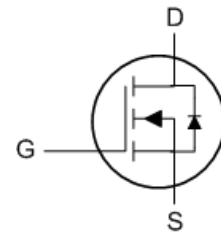
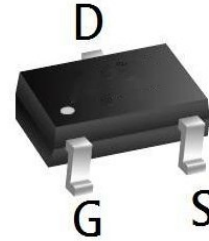


Product Summary

BVDSS	RDSON	ID
30V	18mΩ	5.8A

- ★ Green Device Available
- ★ Super Low Gate Charge
- ★ Excellent Cdv/dt effect decline
- ★ Advanced high cell density Trench technology

SOT23-3L Pin Configuration



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	± 12	V
$I_D@T_A=25^\circ\text{C}$	Continuous Drain Current, $V_{GS} @ 10\text{V}^1$	5.8	A
$I_D@T_A=70^\circ\text{C}$	Continuous Drain Current, $V_{GS} @ 10\text{V}^1$	4.2	A
I_{DM}	Pulsed Drain Current ²	23.4	A
$P_D@T_A=25^\circ\text{C}$	Total Power Dissipation ³	1.5	W
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient ¹	---	92	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance Junction-Case ¹	---	---	$^\circ\text{C/W}$

Electrical Characteristics (T_J=25°C unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	30	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =30V, V _{GS} =0V,	-	-	1.0	μA
I _{GSS}	Gate to Body Leakage Current	V _{DS} =0V, V _{GS} = ±12V	-	-	±100	nA
On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	0.5	0.9	1.4	V
R _{DS(on)}	Static Drain-Source on-Resistance note2	V _{GS} =10V, I _D =4.2A	-	18	25	mΩ
		V _{GS} =4.5V, I _D =4A	-	26	34	
		V _{GS} =2.5V, I _D =1A	-	35	50	
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =15V, V _{GS} =0V, f=1.0MHz	-	602	-	pF
C _{oss}	Output Capacitance		-	56	-	pF
C _{rss}	Reverse Transfer Capacitance		-	42	-	pF
Q _g	Total Gate Charge	V _{DS} =15V, I=4A, V _{GS} =4.5V	-	4.8	-	nC
Q _{gs}	Gate-Source Charge		-	1.2	-	nC
Q _{gd}	Gate-Drain("Miller") Charge		-	1.7	-	nC
Switching Characteristics						
t _{d(on)}	Turn-on Delay Time	V _{DS} =15V, I _D =4A, R _{GEN} =3Ω, V _{GS} =4.5V	-	12	-	ns
t _r	Turn-on Rise Time		-	52	-	ns
t _{d(off)}	Turn-off Delay Time		-	17	-	ns
t _f	Turn-off Fall Time		-	10	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I _S	Maximum Continuous Drain to Source Diode Forward Current		-	-	6.0	A
I _{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	23.2	A
V _{SD}	Drain to Source Diode Forward Voltage	V _{GS} =0V, I _S =5.8A	-	-	1.2	V

Notes:1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

Typical Performance Characteristics

Figure 1: Output Characteristics

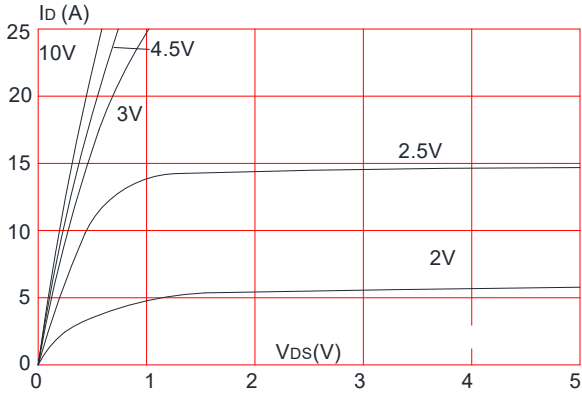


Figure 2: Typical Transfer Characteristics

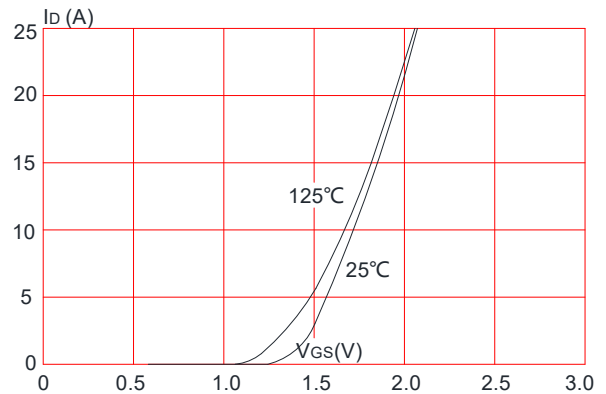


Figure 3: On-resistance vs. Drain Current

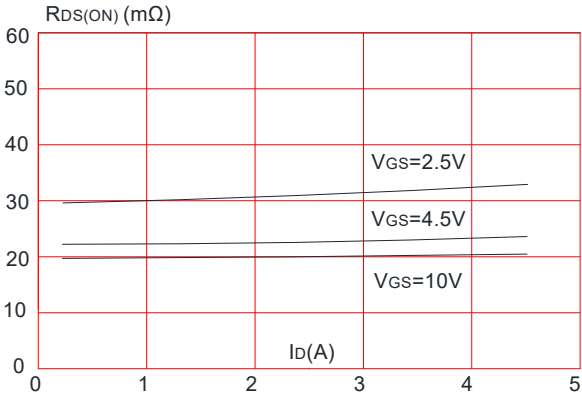


Figure 4: Body Diode Characteristics

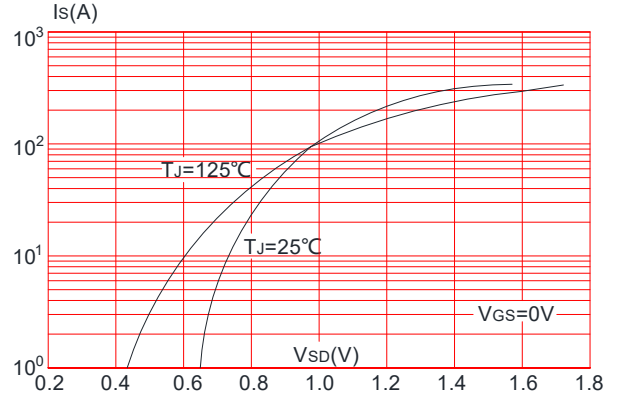


Figure 5: Gate Charge Characteristics

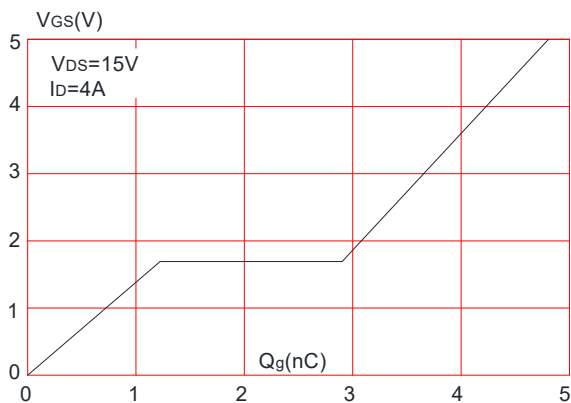


Figure 6: Capacitance Characteristics

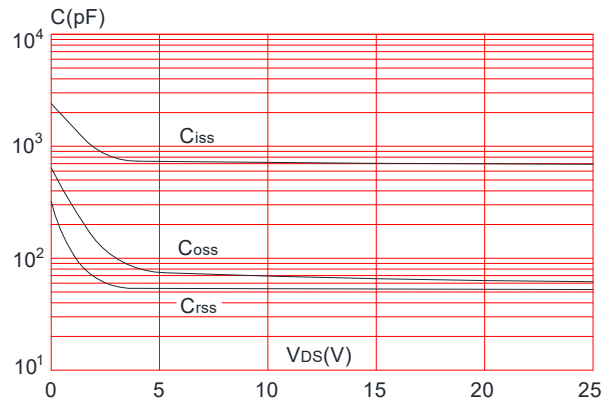


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

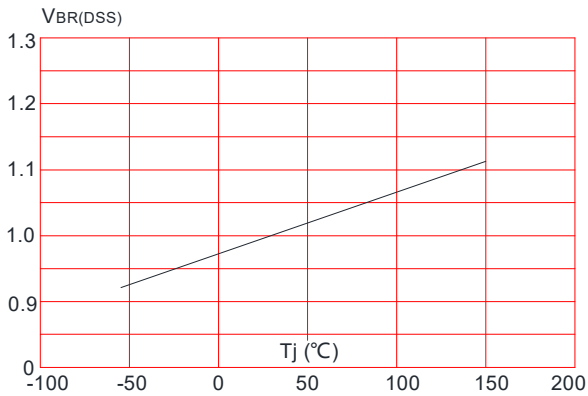


Figure 8: Normalized on Resistance vs. Junction Temperature

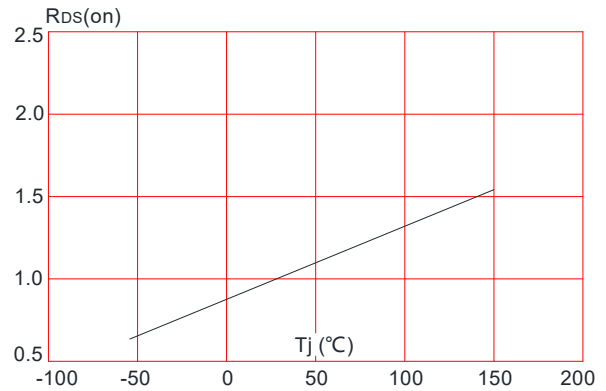


Figure 9: Maximum Safe Operating Area

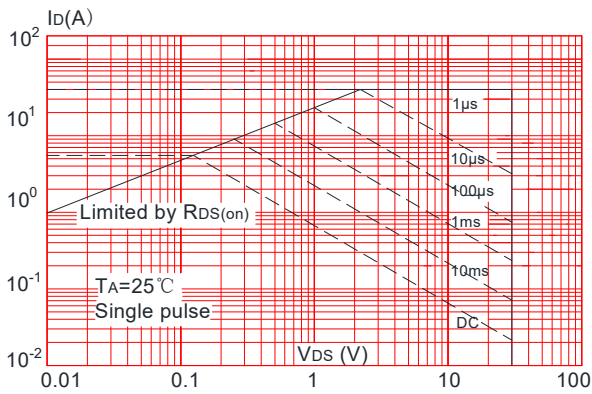


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

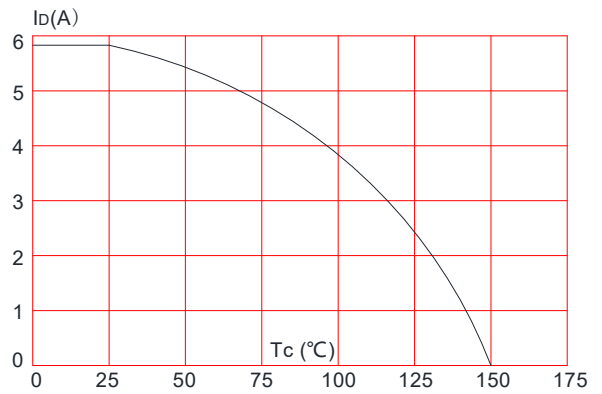
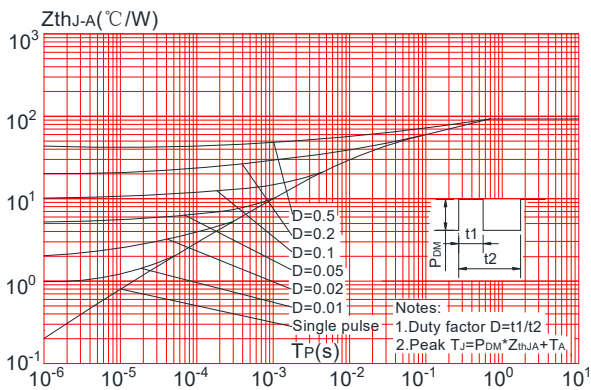
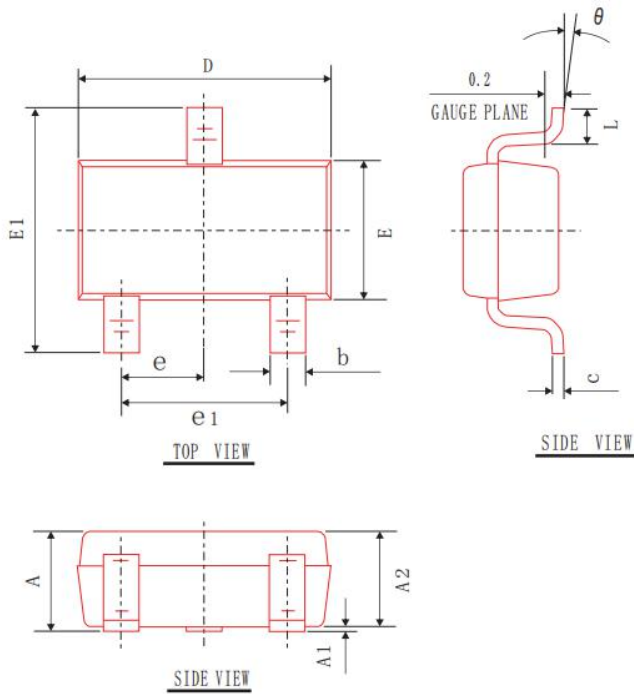


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Ambient



Package Mechanical Data-SOT-23-3L



COMMON DIMENSIONS
(UNITS OF MEASURE=mm)

SYMBOL	MIN	NOM	MAX
A	---	---	1.30
A1	0.00	0.05	0.10
A2	1.00	1.10	1.20
b	0.30	0.40	0.50
c	0.119	0.127	0.135
e1	1.80	1.90	2.00
D	2.80	2.90	3.00
E	1.50	1.60	1.70
E1	2.60	2.80	3.00
L	0.30	0.45	0.60
θ	0°	4°	8°
e	0.95BSC		