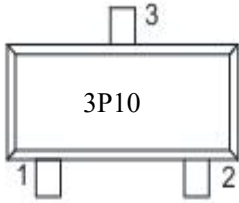

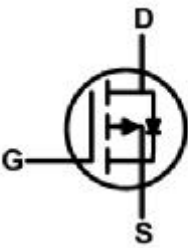


Features <ul style="list-style-type: none"> ➤ Super Low Gate Charge ➤ Green Device Available ➤ Excellent Cdv/dt effect decline ➤ Advanced high cell density Trench technology ➤ 100% EAS Guaranteed 	Bvdss	Rdson	ID
	-100V	180mΩ	-3A
Application <ul style="list-style-type: none"> ➤ PWM applications ➤ Load Switch ➤ Power management 			
Package <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  <p>1. Marking and pin assignment</p> </div> <div style="text-align: center;">  <p>2. SOT23-3L top view</p> </div> <div style="text-align: center;">  <p>3. Schematic diagram</p> </div> </div>			

Package Marking and Ordering Information

Device Marking	Device	Device Package	Quantity
3P10	3P10	SOT23-3L	3000

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	-100	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current V _{GS} @ -10V (1)	(Ta =25°C)	I _D	-0.75 A
	(Ta =100°C)	I _D	-0.6 A
	(Tc =25°C)	I _D	-3 A
	(Tc =25°C)	I _D	-1.2 A
Pulsed Drain Current (2)	I _{DM}	-6	A
Single Pulsed Avalanche Energy (3)	E _{AS}	14.5	mJ
Avalanche Current	I _{AS}	-4.5	A
Power Dissipation(Ta =25°C)	P _d	2	W
Power Dissipation(Tc =25°C)	P _d	10	W
Junction Temperature	T _J	-55~+150	°C
Storage Temperature	T _{STG}	-55~+150	°C



Thermal Resistance Ratings

Parameter	Symbol	Value	Unit
Junction to case	$R_{\theta JC}$	8	$^{\circ}C/W$
Junction to ambient	$R_{\theta JA}$	72	$^{\circ}C/W$

Ordering Information

Ordering Number	Package	Pin Assignment			Packing
		G	D	S	
Halogen Free					
HL3P10	SOT23-3L	1	2	3	Tape Reel

Electrical Characteristics ($T_j=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Drain to Source Breakdown Voltage	$V_{(br)dss}$	$I_d = -250\mu A, V_{gs} = 0V$	-100	-	-	V
Zero-Gate Voltage Drain Current ($T_j=25^{\circ}C$)	I_{dss}	$V_{ds} = -80V, V_{gs} = 0V$	-	-	-1.0	μA
Zero-Gate Voltage Drain Current($T_j=80^{\circ}C$)		$V_{ds} = -80V, V_{gs} = 0V$	-	-	-30	μA
Gate to Source Leakage Current	I_{gss}	$V_{gs} = \pm 20V, V_{ds} = 0V$	-	-	± 100	nA
Gate Threshold Voltage	$V_{gs(th)}$	$V_{ds}=V_{gs}, I_d=-250\mu A$	-1.2	-1.8	-2.5	V
Static Drain to Source On-State Resistance (2)	$R_{ds(on)}$	$I_d = -3A, V_{gs} = -10V$	-	180	220	m Ω
		$I_d = -2A, V_{gs} = -4.5V$	-	210	225	m Ω
Input Capacitance	C_{iss}	$V_{gs}=0V, V_{ds}=-30V,$ Frequency=1.0MHz	-	1228	-	pF
Output Capacitance	C_{oss}		-	41	-	pF
Reverse Transfer Capacitance	C_{rss}		-	29	-	pF
gate resistance	R_g	$f=1.0MHz$	-	13	-	Ω
Turn-ON Delay Time	$t_{d(on)}$	$V_{dd} = -30V$ $I_d = -1A$ $R_g = 3.3\Omega$ $V_{gs} = -10V$	-	9	-	ns
Rise Time	t_r		-	6	-	ns
Turn-OFF Delay Time	$t_{d(off)}$		-	39	-	ns
Fall Time	t_f		-	33	-	ns
Total Gate Charge	Q_g	$V_{ds} = -50V,$ $V_{gs} = -10V,$ $I_d = -2A$	-	19	-	nC
	Q_{gs}		-	3.4	-	nC
	Q_{gd}		-	2.9	-	nC
Diode Forward Voltage (2)	V_{sd}	$I_s = -20A, V_{gs} = 0V$	-	-	-1.2	V
Continuous Diode Forward Current (1) (5)	I_s	$V_G=V_D=0V$, Force Current	-	-	-3	A

Notes:

- 1.The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper.
- 2.The data tested by pulsed , pulse width \cong 300us , duty cycle \cong 2%
- 3.The EAS data shows Max. rating . The test condition is $V_{DD}=-25V, V_{GS}=-10V, L=0.5mH, I_{AS}=-14A$
- 4.The power dissipation is limited by 150°C junction temperature
- 5.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

Typical Characteristics

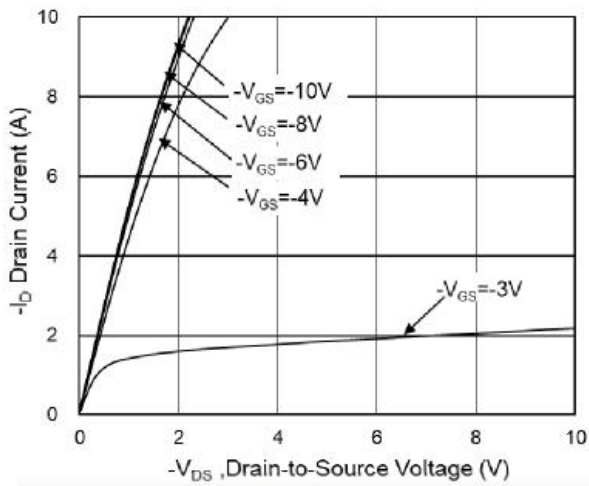


Fig.1 Typical Output Characteristics

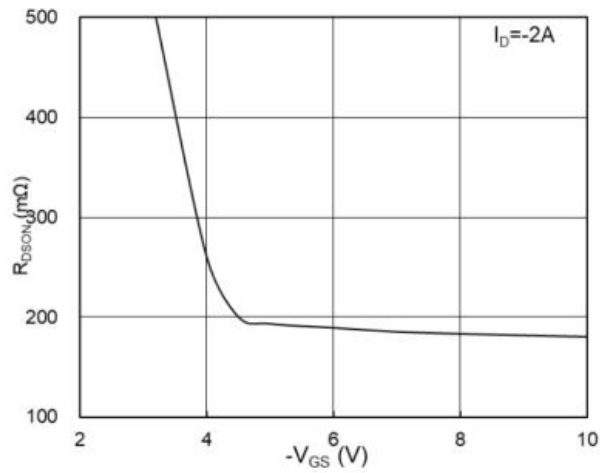


Fig.2 On-Resistance vs G-S Voltage

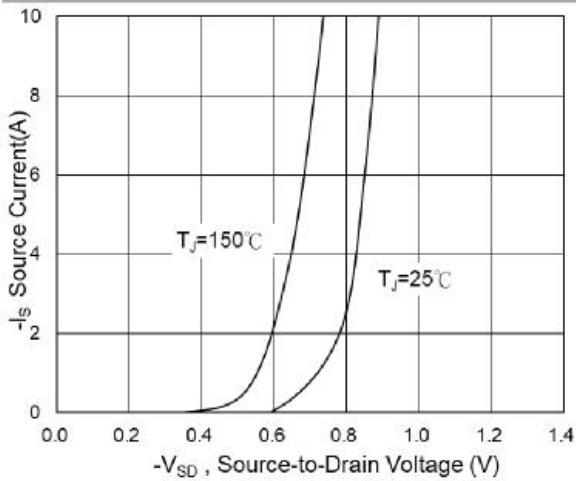


Fig.3 Source Drain Forward Characteristics

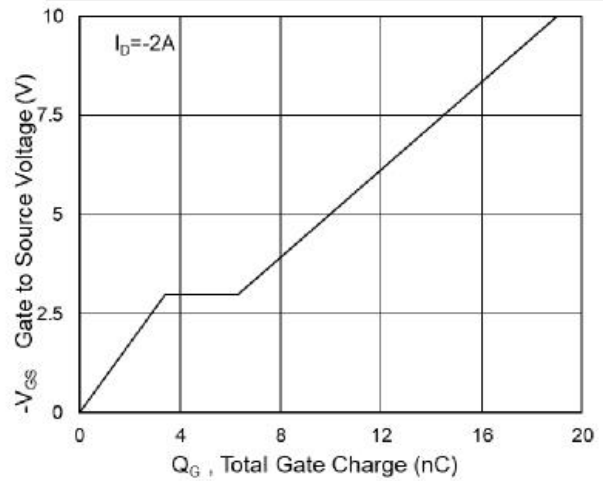


Fig.4 Gate-Charge Characteristics

Typical Characteristics

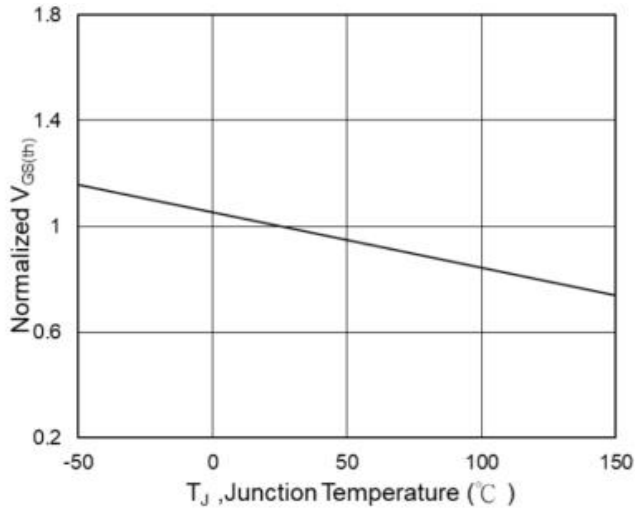


Fig.5 Normalized $V_{GS(th)}$ vs T_J

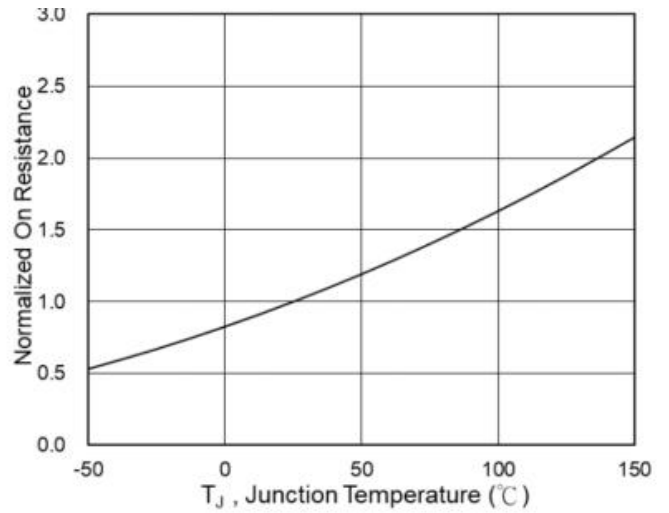


Fig.6 Normalized $R_{DS(on)}$ vs T_J

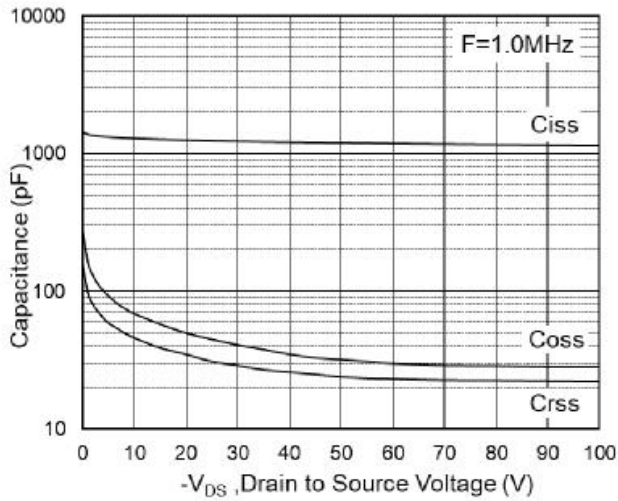


Fig.7 Capacitance

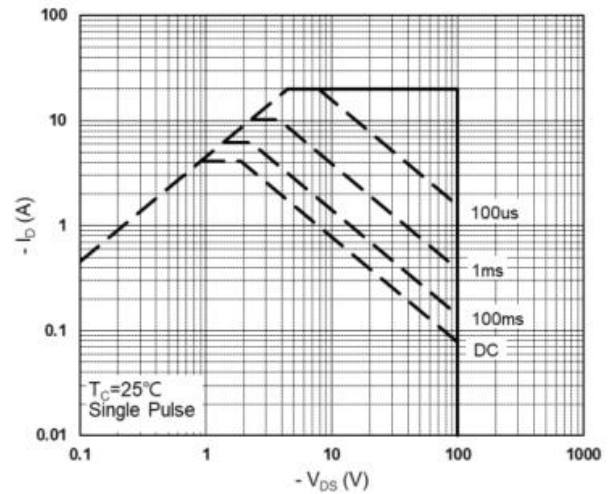


Fig.8 Safe Operating Area

Typical Characteristics

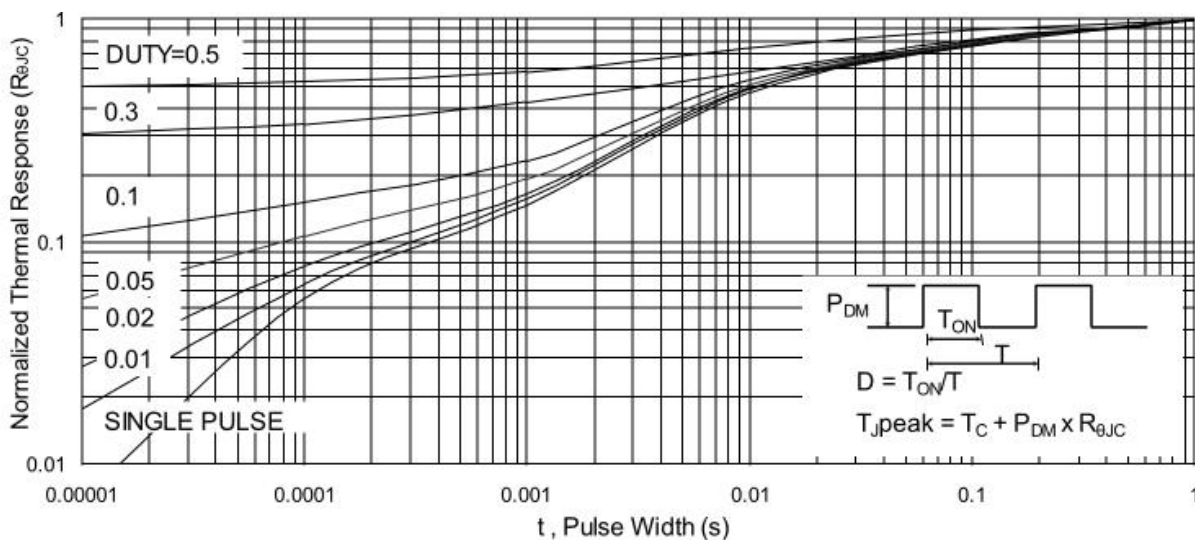


Fig.9 Normalized Maximum Transient Thermal Impedance

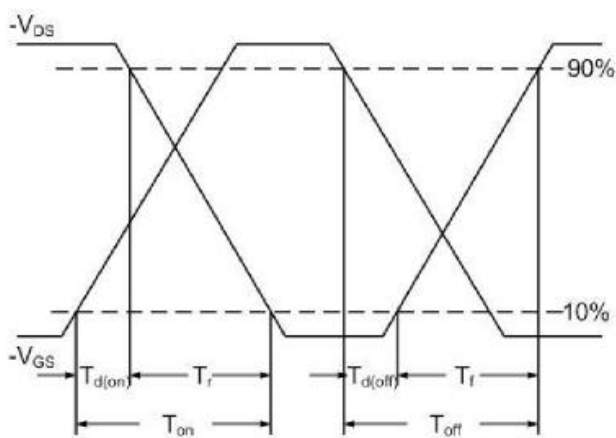


Fig.10 Switching Time Waveform

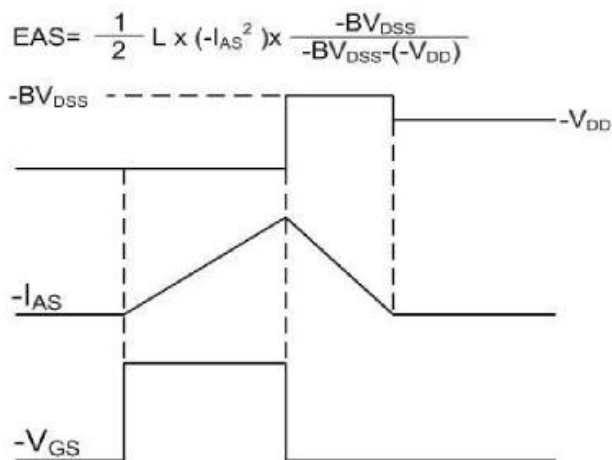
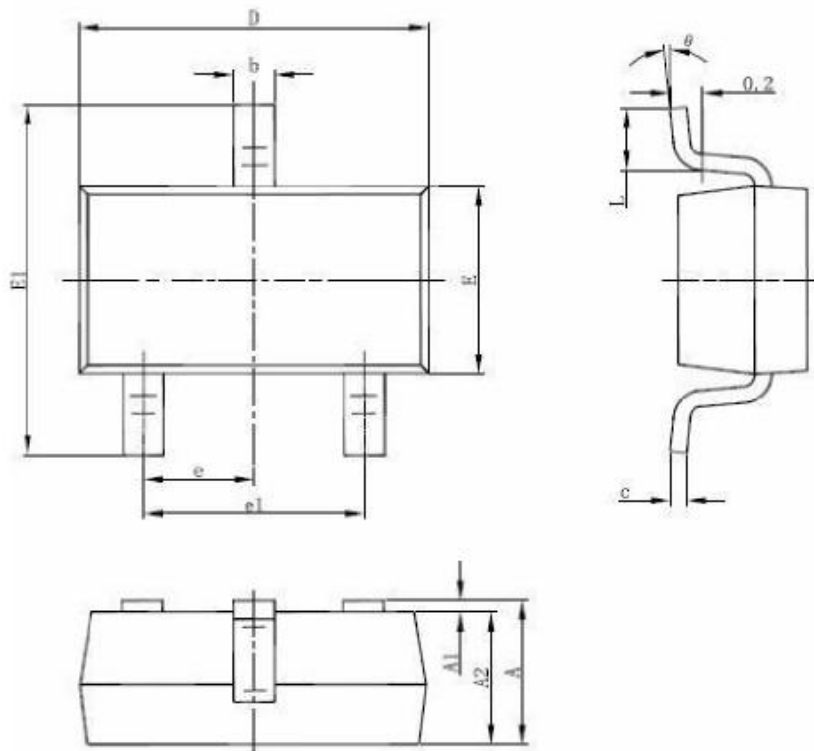


Fig.11 Unclamped Inductive Waveform

Package Dimensions

➤ SOT23-3L



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°



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[BXP4N65F](#) [AOL1454G](#) [WMJ80N60C4](#) [BXP2N20L](#) [BXP2N65D](#) [BXT1150N10J](#) [BXT1700P06M](#) [TSM60NB380CP](#) [ROG](#) [RQ7L055BGTCR](#)
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