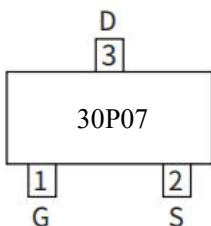
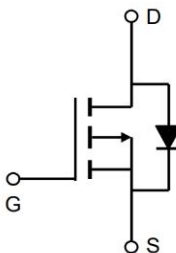


Features ➤ Super Low Gate Charge ➤ Green Device Available ➤ Excellent Cdv/dt effect decline ➤ Advanced high cell density Trench technology	Bvdss	Rdson	ID
	-30V	23mΩ	-7A
	Application ➤ Battery protection ➤ Load Switch ➤ Uninterruptible power supply		

RoHS

Package		
 Marking and pin assignment	 SOT23-3L top view	 Schematic diagram

Package Marking and Ordering Information

Device Marking	Device	Device Package	Quantity
30P07	30P07L	SOT23-3L	3000

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	-30	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current, V _{GS} @-4.5V ¹	I _D @T _A =25°C	-7	A
	I _D @T _A =70°C	-4.6	A
Pulsed Drain Current ²	I _{DM}	-18	A
Total Power Dissipation ³	P _D @T _A =25°C	1.5	W
Storage Temperature Range	T _{STG}	-55 to 150	°C
Operating Junction Temperature Range	T _J	-55 to 150	°C

Thermal Resistance Ratings

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-Ambient ¹	R _{θJA}	-	°C/W
Thermal Resistance Junction-Case ¹	R _{θJC}	-	°C/W



Ordering Information

Ordering Number	Package	Pin Assignment			Packing
Halogen Free		G	S	D	
HL30P07L	SOT23-3L	1	2	3	Tape Reel

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30	-	-	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=-30V, V_{GS}=0V, T_J=25^{\circ}\text{C}$	-	-	-1	μA
		$V_{DS}=-30V, V_{GS}=0V, T_J=100^{\circ}\text{C}$	-	-	-100	
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	± 100	nA
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1	-1.5	-2.5	V
Static Drain-Source On-Resistance ²	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-7A$	-	23	35	m Ω
		$V_{GS}=-4.5V, I_D=-4A$	-	27	54	
		$V_{GS}=-2.5V, I_D=-3A$	-	-	-	
Forward Transconductance	g_{fs}	$V_{DS}=-5V, I_D=-15A$	-	50	-	S
Input Capacitance	C_{iss}	$V_{DS}=-15V, V_{GS}=0V,$ $f=1\text{MHz}$	-	982	-	pF
Output Capacitance	C_{oss}		-	135	-	
Reverse Transfer Capacitance	C_{rss}		-	109	-	
Total Gate Charge	Q_g	$V_{DS}=-15V, V_{GS}=-10V, I_D=-4A$	-	10	-	nC
Gate-Source Charge	Q_{gs}		-	2	-	
Gate-Drain Charge	Q_{gd}		-	2.7	-	
Turn-on Delay Time	$t_{d(on)}$	$V_{GS}=-10V, V_{DD}=-15V, R_G=2.5\Omega$	-	11	-	ns
Rise Time	t_r		-	19	-	
Turn-off Delay Time	$t_{d(off)}$		-	45	-	
Fall Time	t_f		-	26	-	
Drain Forward Voltage	V_{SD}	$V_{GS}=0V, I_S=-1A, T_J=25^{\circ}\text{C}$	-	-	-1.2	V
Continuous Source Current ^{1,5}	I_S	$V_G=V_D=0V, \text{Force Current}$	-	-	-7	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 $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 3.The power dissipation is limited by 150C junction temperature.
- 4.The data is theoretically the same as I_D and I_{DM} , in real applications , should be limited by total power dissipation.

Typical Characteristics

Figure 1: Output Characteristics

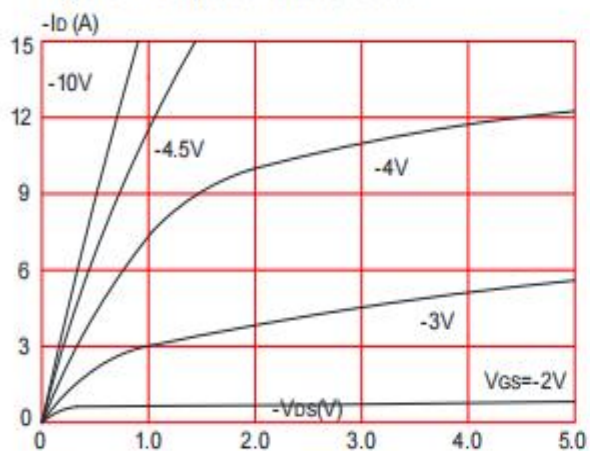


Figure 2: Typical Transfer Characteristics

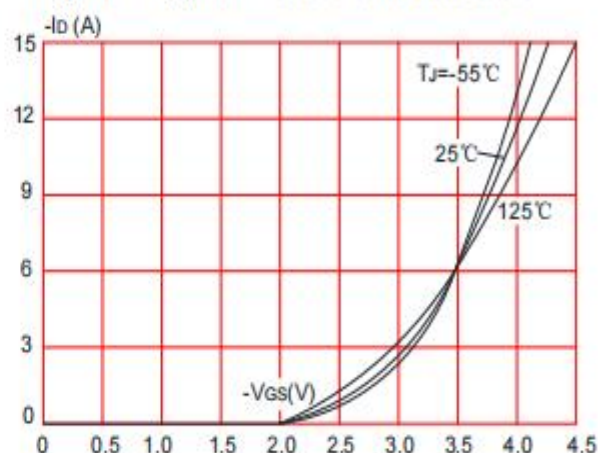


Figure 3: On-resistance vs. Drain Current

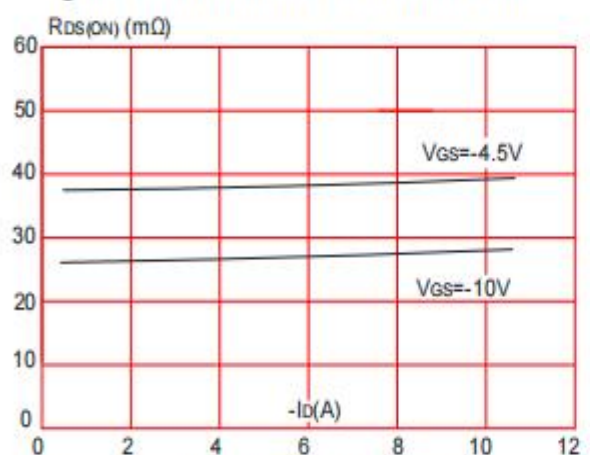


Figure 4: Body Diode Characteristics

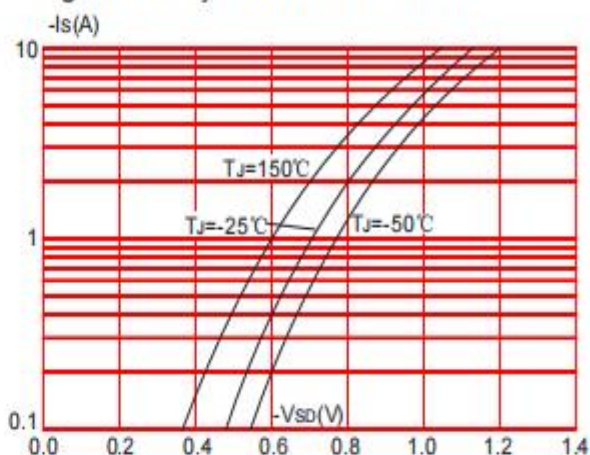


Figure 5: Gate Charge Characteristics

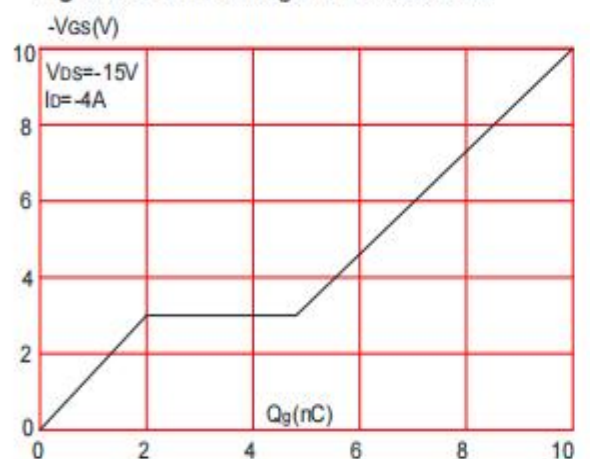


Figure 6: Capacitance Characteristics

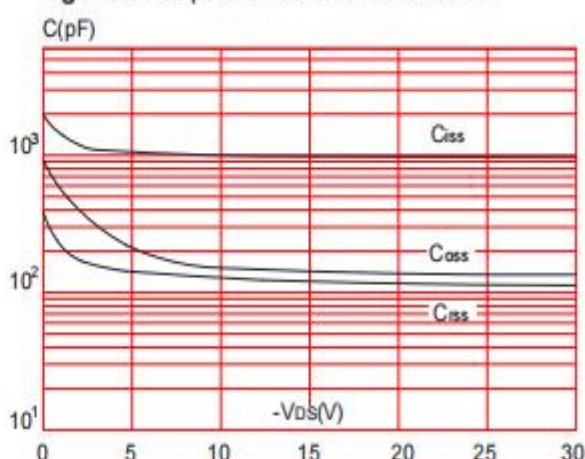


Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

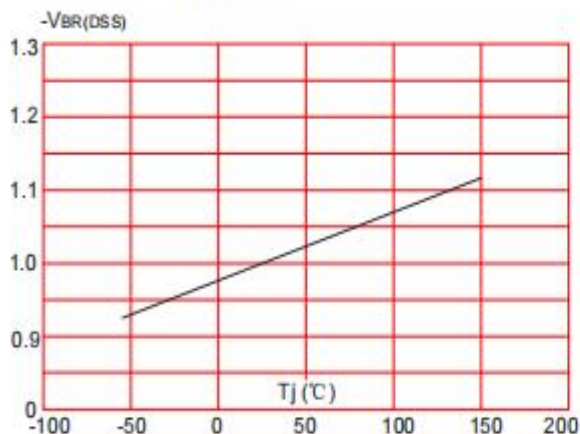


Figure 8: Normalized on Resistance vs. Junction Temperature

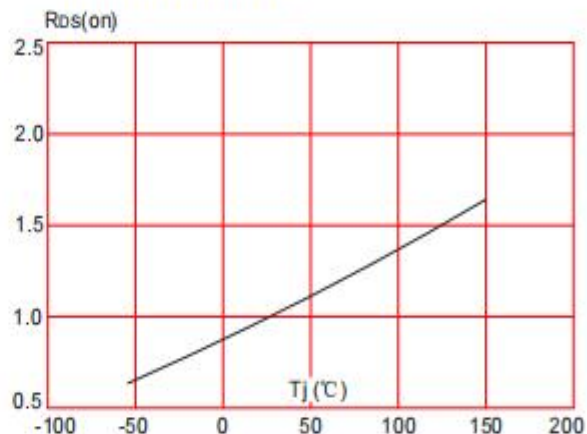


Figure 9: Maximum Safe Operating Area

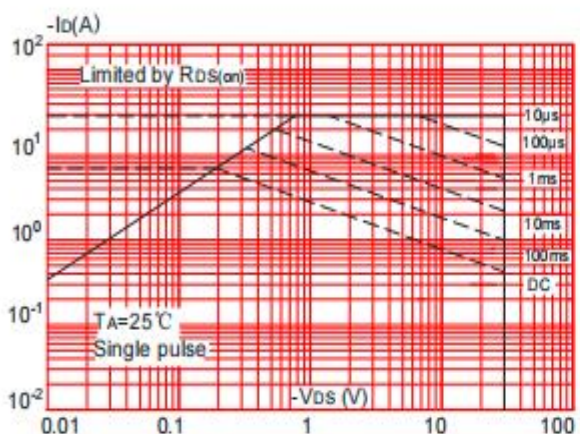
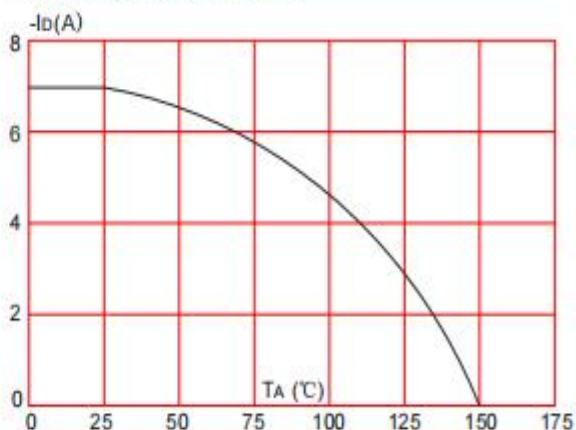
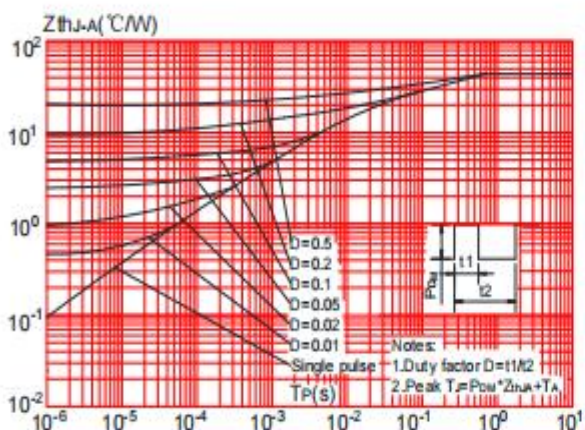


Figure 10: Maximum Continuous Drain Current vs. Ambient Temperature

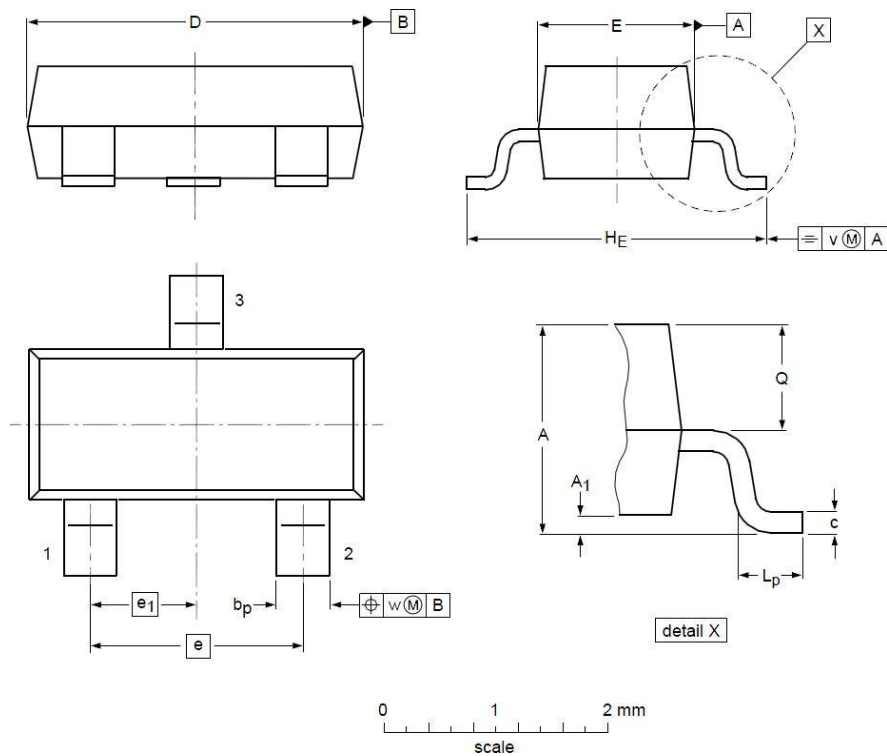


Maximum Effective Transient Thermal Impedance, Junction-to-Ambient





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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