Descriptions

This 30V N-Channel MOSFET in a SOT-23-6 Plastic Package.

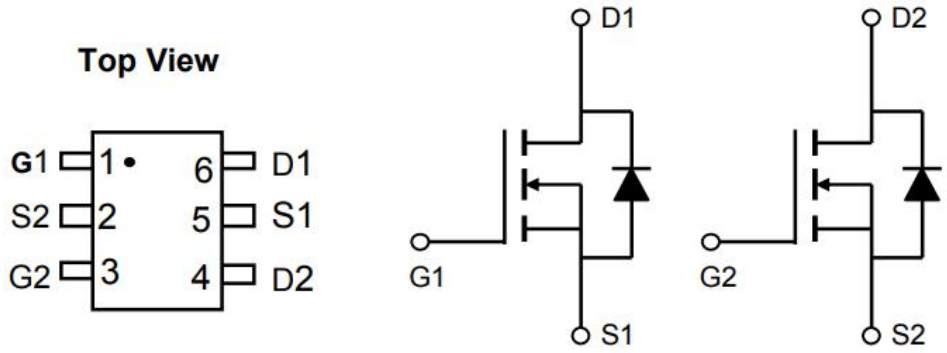
Features

- Super high dense cell design for low $R_{DS(ON)}$
- Rugged and reliable
- Halogen-free product

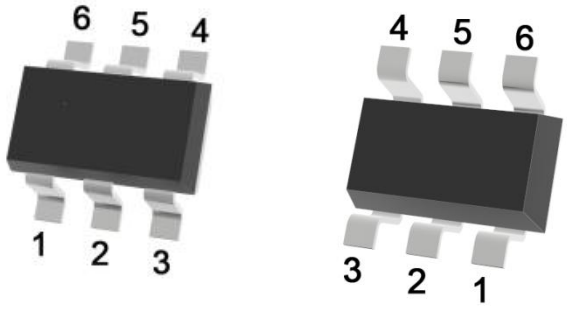
Applications

Power Management in Notebook computer, Portable Equipment and Battery powered systems.

Equivalent Circuit



Pinning



PIN1：G1　PIN 2：S2　PIN 3：G2
PIN 4：D2　PIN 5：S1　PIN 6：D1

Absolute Maximum Ratings(Ta=25℃)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	30	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current – Continuous		I_D	5.5	A
Pulsed Drain Current		I_{DM}	27.5	A
Power Dissipation		P_D	1.3	W
Storage Temperature Range		T_{stg}	-55～150	℃
Maximum Junction-to-Ambient	t ≤ 10s	$R_{\theta JA}$	95	℃/W
Maximum Junction-to-Ambient	Steady-State		150	
Maximum Junction-to-Lead	Steady-State	$R_{\theta JL}$	68	

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0 I_D=250μA	30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS}=0 V_{DS}=30V			1.0	μA
Gate–Body Leakage.	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	1.0	1.6	2.5	V
Static Drain–Source On–Resistance	$R_{DS(on)1}$	V_{GS}=10V I_D=5.5A		20	31	mΩ
	$R_{DS(on)2}$	V_{GS}=4.5V I_D=4.0A		26	43	mΩ
Drain–Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_D=1A		0.75	1.2	V

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Capacitance	Ciss	VGS=0V, VDS=25V f=1MHz		690		pF
Output Capacitance	Coss			200		
Reverse Transfer Capacitance	Crss			130		
Gate resistance	Rg	VGS=0V, VDS=0V f=1MHz		3.0		Ω
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=10V, V_{DS}=15V, I_D=5.5A		5.2		nC
Total Gate Charge	$Q_{g(4.5V)}$			2.5		
Gate Source Charge	Q_{gs}			0.8		
Gate Drain Charge	Q_{gd}			1.3		
Turn–On Delay Time	$t_{d(on)}$	V_{GS}=10V R_L=3Ω V_{DS}=15V R_{GEN}=3Ω		4.5		ns
Turn–On Rise Time	t_r			2.5		
Turn–Off Delay Time	$t_{d(off)}$			14.5		
Turn–Off Fall Time	t_f			3.5		

Electrical Characteristic Curve

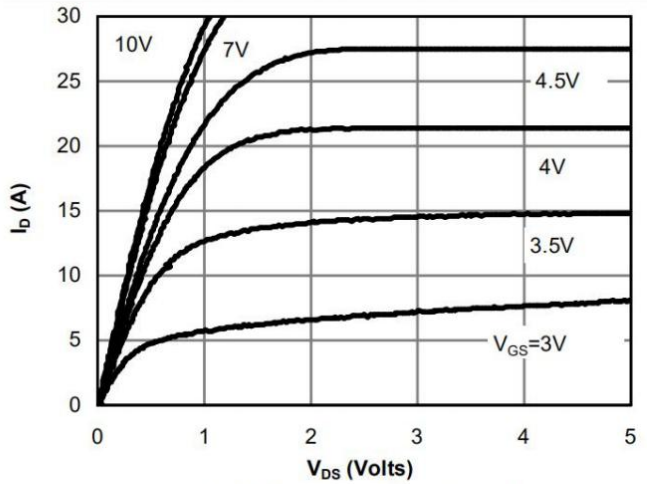


Fig 1: On-Region Characteristics

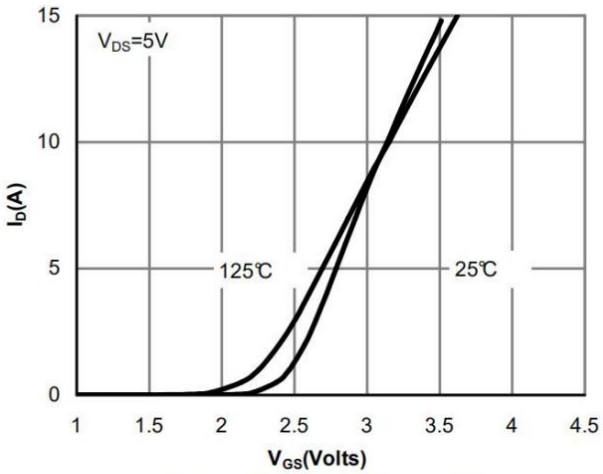


Figure 2: Transfer Characteristics

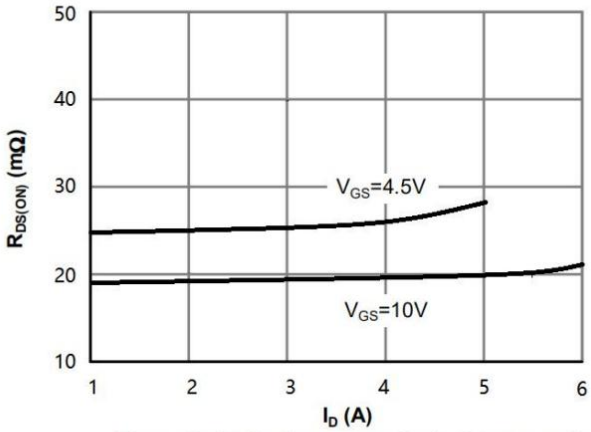


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

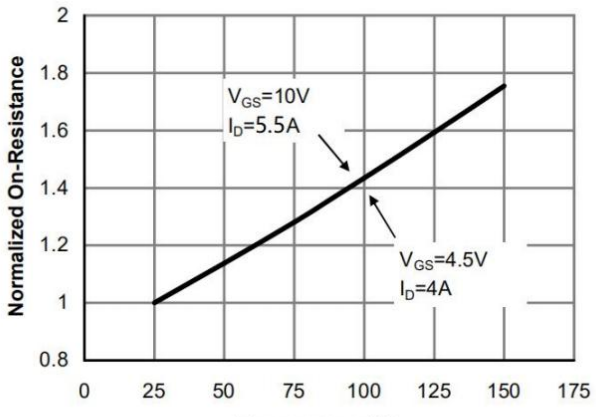


Figure 4: On-Resistance vs. Junction Temperature

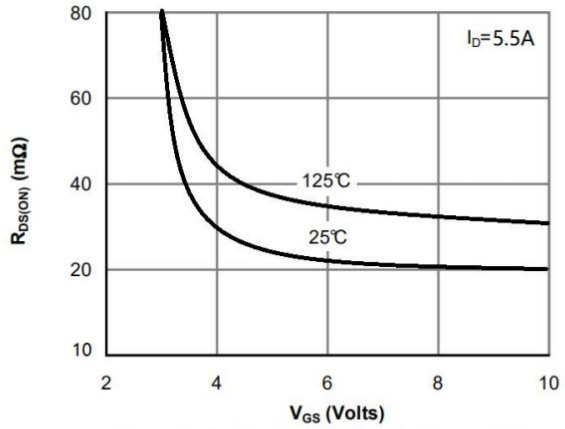


Figure 5: On-Resistance vs. Gate-Source Voltage

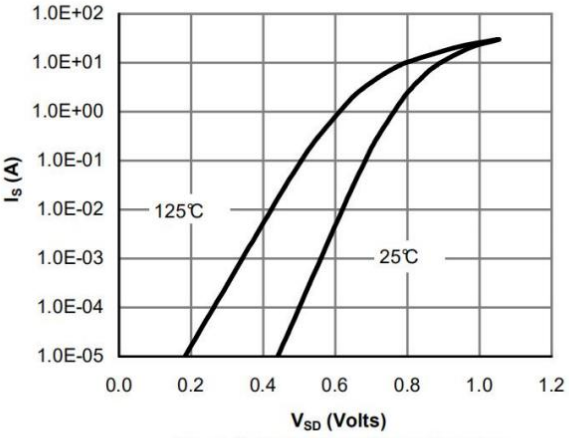


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

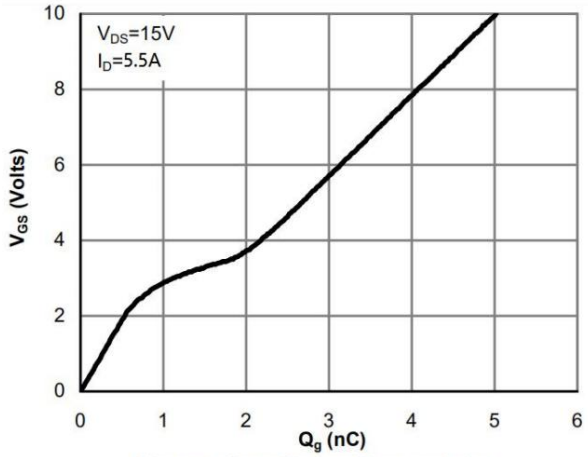


Figure 7: Gate-Charge Characteristics

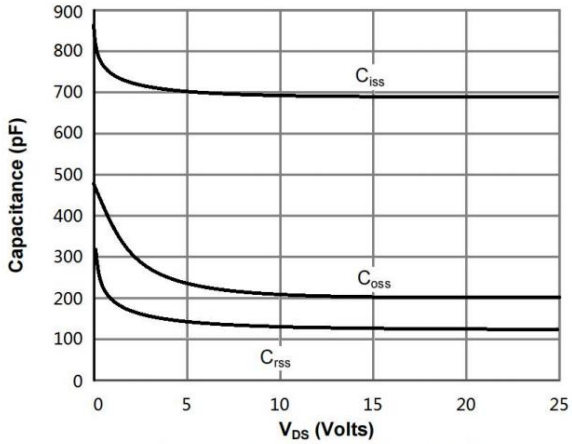


Figure 8: Capacitance Characteristics

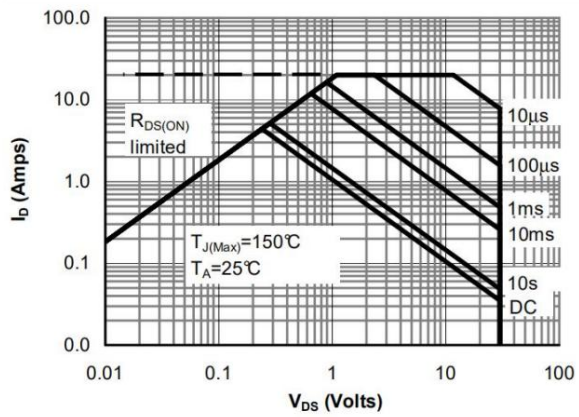


Figure 09: Maximum Forward Biased Safe Operating Area

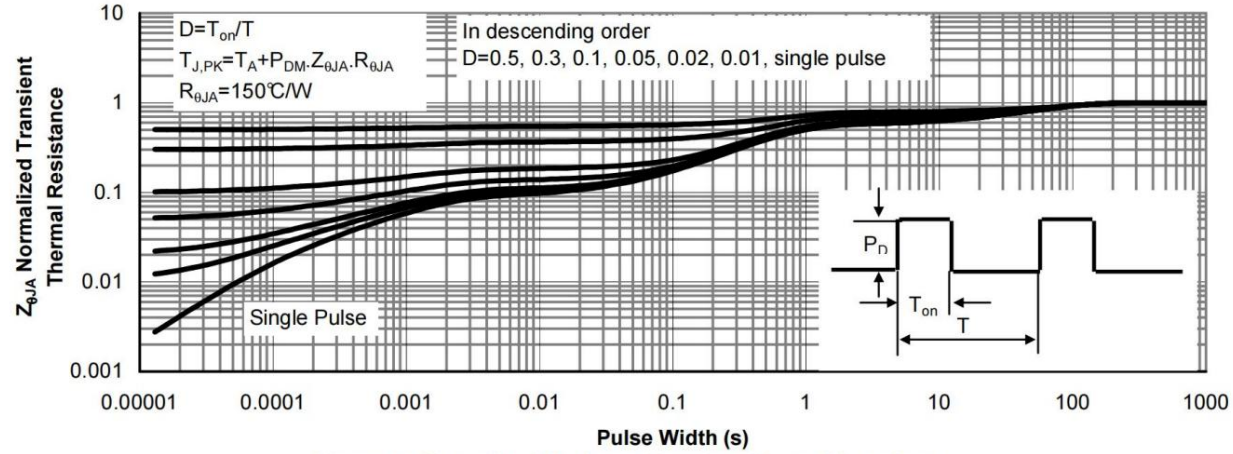
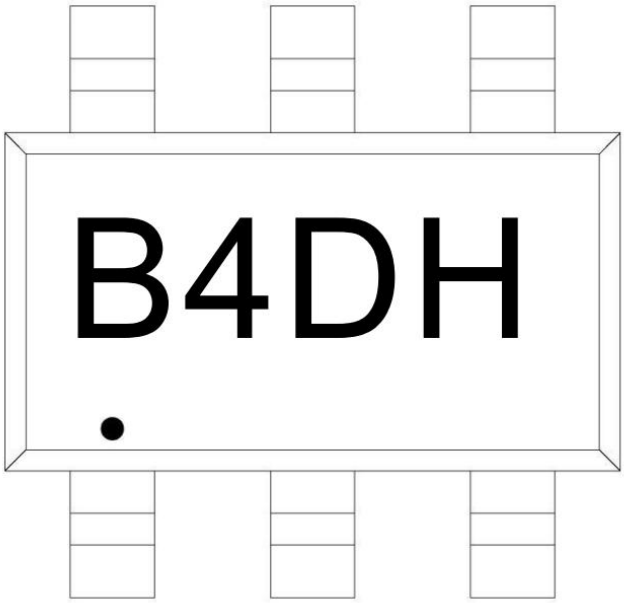


Figure 10: Normalized Maximum Transient Thermal Impedance

Marking Instructions



Note:

B4D: Product Type Code

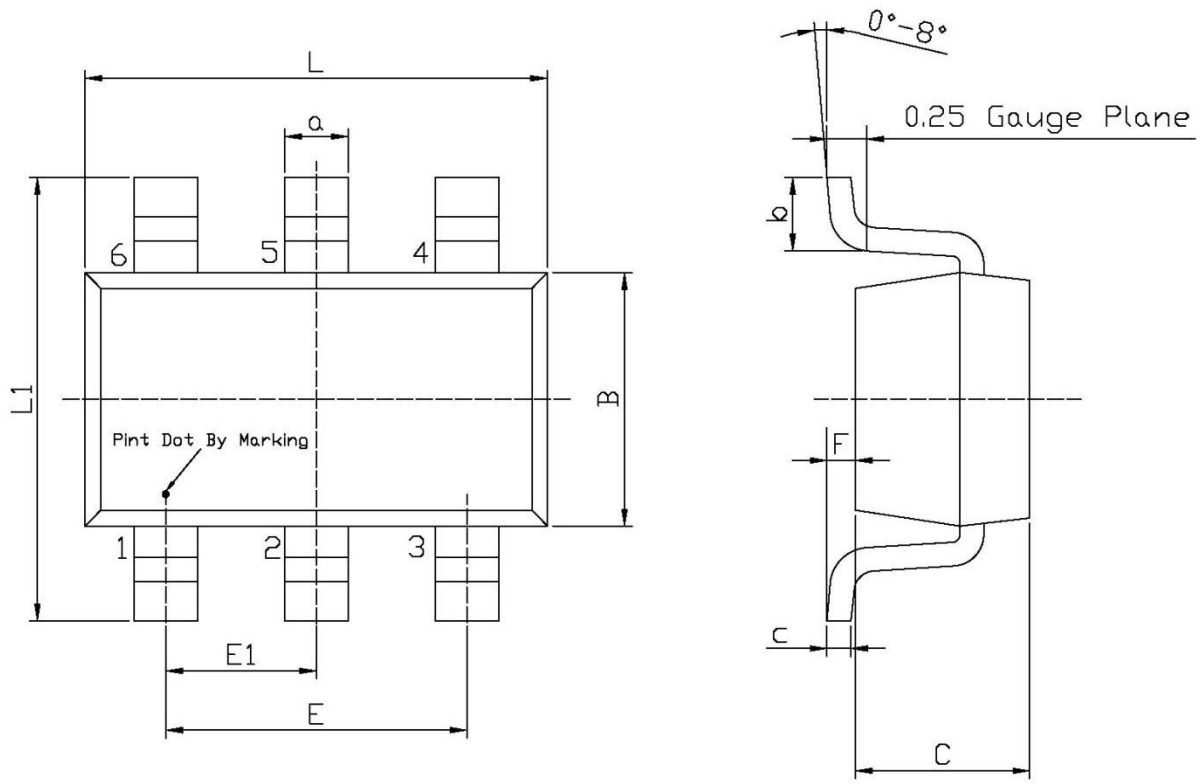
H: Company Code.

Packaging SPEC

REEL INFORMATION

Package Type	Units					Dimension (unit：mm³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
SOT23-6	3,000	10	30,000	4	120,000	7″ ×8	210×205×205	445×230×435

Package Outline Dimensions



Unit: mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.82	3.02	E1	0.85	1.05
B	1.50	1.70	a	0.35	0.50
C	0.90	1.30	c	0.10	0.20
L1	2.60	3.00	b	0.35	0.55
E	1.80	2.00	F	0	0.15

SOT23-6