

Description

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

Applications

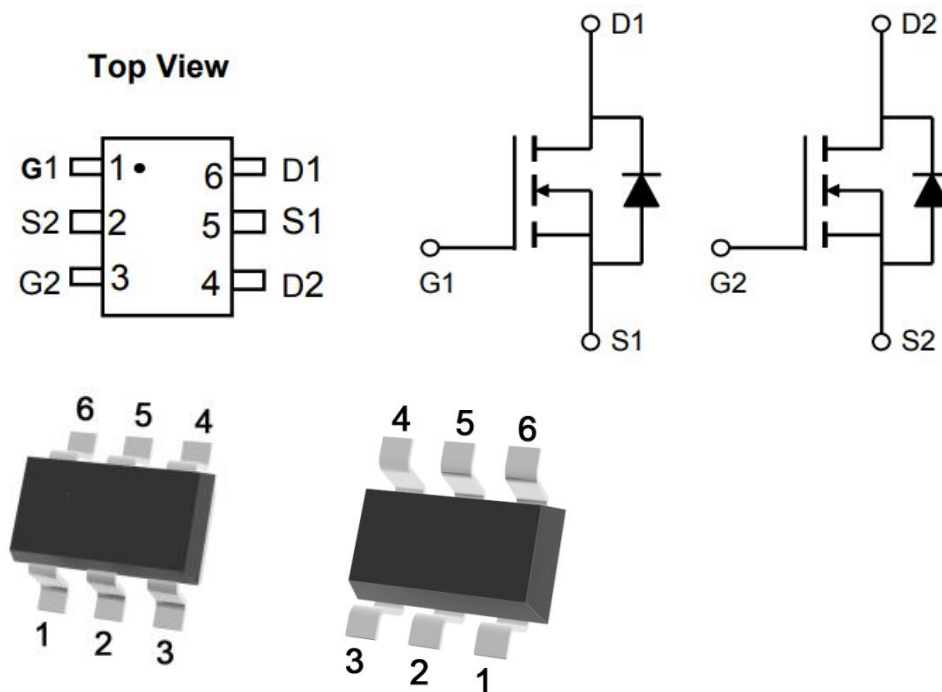
Power Management in Notebook computer, Portable Equipment and Battery powered systems.

Features

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

V_{DSS}	$R_{DS(on)Typ}$	I_D
30V	20m Ω	5.5A

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	$t \leq 10s$	$R_{\theta JA}$	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	$V_{(BR)DSS}$	$V_{GS}=0$ $I_D=250\mu A$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{GS}=0$ $V_{DS}=30V$			1.0	μA
Gate–Body Leakage.	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			±10 0	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	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	Qg(10V)	VGS=10V, VDS=15V, ID=5.5A		5.2		nC
Total Gate Charge	Qg(4.5V)			2.5		
Gate Source Charge	Qgs			0.8		
Gate Drain Charge	Qgd			1.3		
Turn-On Delay Time	td(on)	VGS=10V RL=3Ω VDS=15V RGEN=3Ω		4.5		ns
Turn-On Rise Time	tr			2.5		
Turn-Off Delay Time	td(off)			14.5		
Turn-Off Fall Time	tf			3.5		

Electrical Characteristic Curve

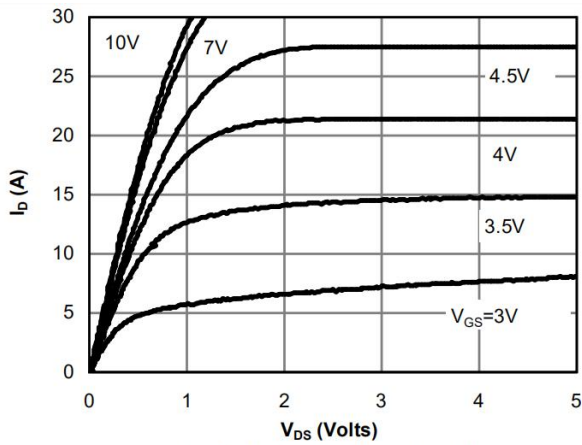


Fig 1: On-Region Characteristics

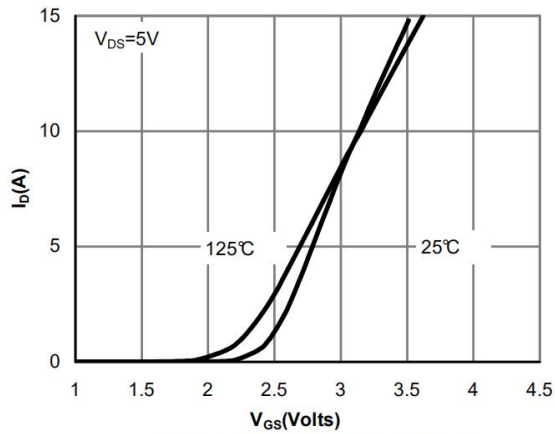


Figure 2: Transfer Characteristics

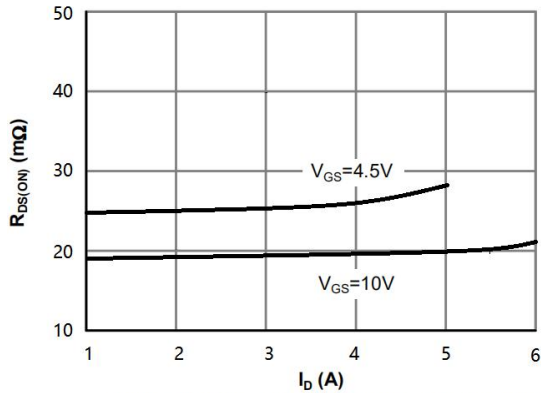


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

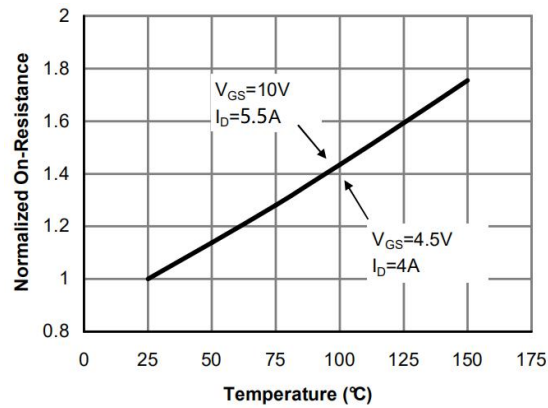


Figure 4: On-Resistance vs. Junction Temperature

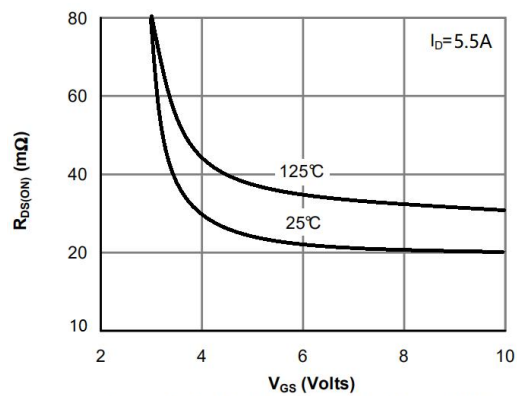


Figure 5: On-Resistance vs. Gate-Source Voltage

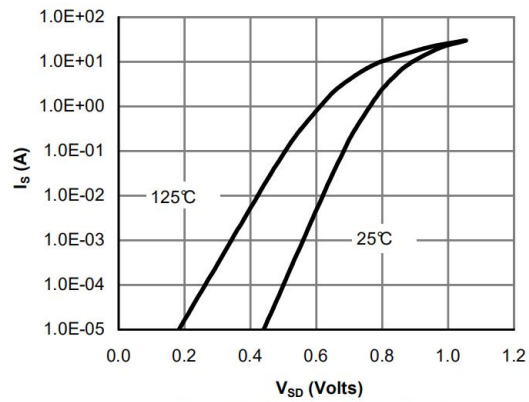


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve

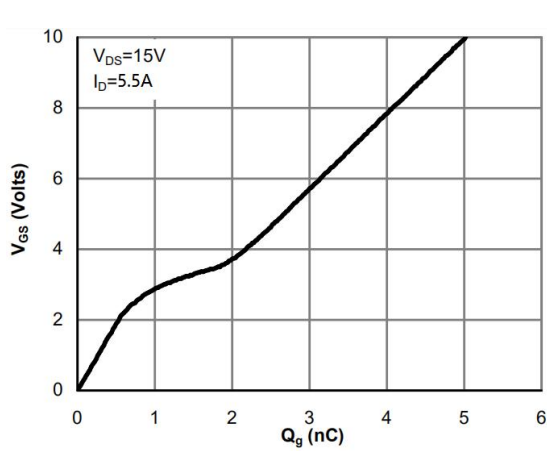


Figure 7: Gate-Charge Characteristics

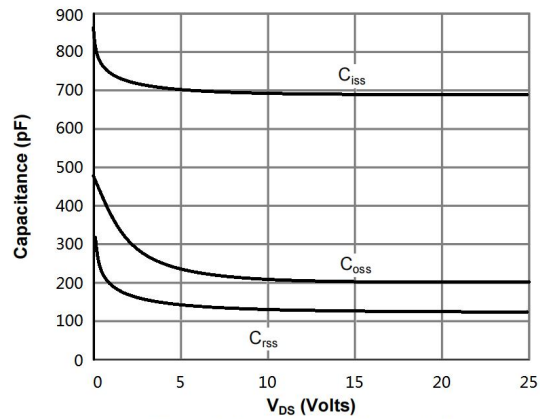


Figure 8: Capacitance Characteristics

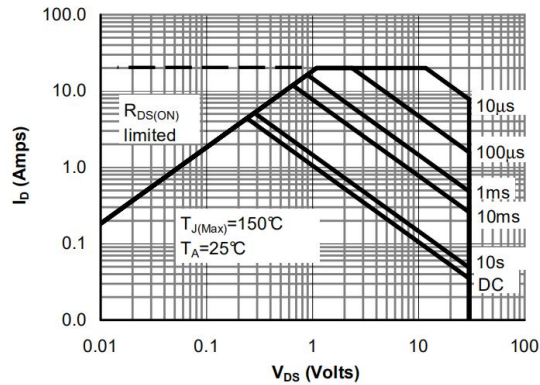


Figure 9: Maximum Forward Biased Safe Operating Area

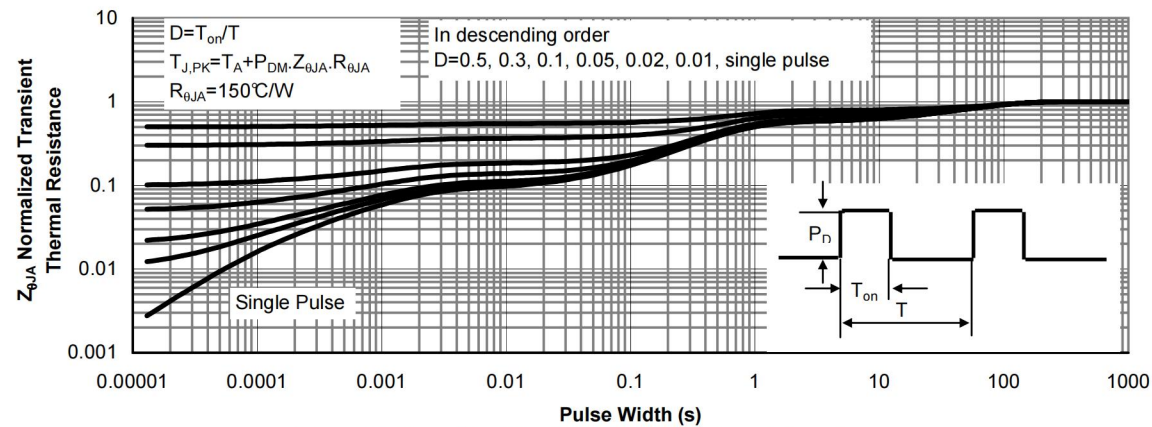
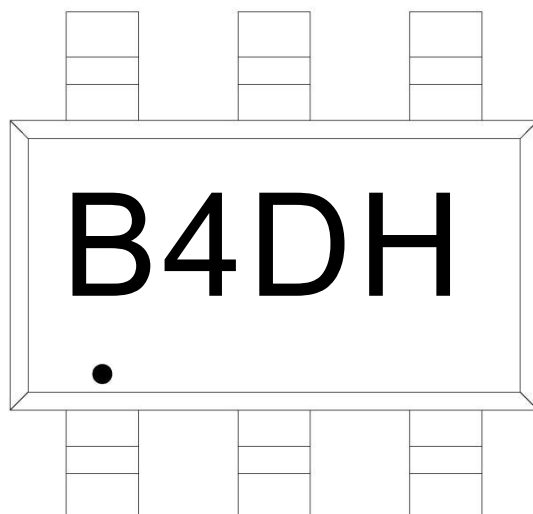


Figure 10: Normalized Maximum Transient Thermal Impedance

Marking Instructions



Note:

B4D : Product Type Code

H: Company Code.

Packaging SPEC.

REEL INFORMATION

Package Type	Units					Dimension (unit: mm ³)		
	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" x8	210×205×205	445×230×435

Package Outline Dimensions

