

Description

This 20V 6.5A N-Channel MOSFET in a SOT-23 Plastic Package.

Applications

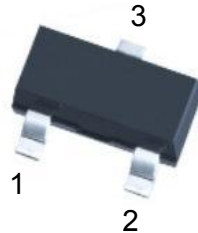
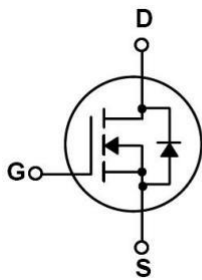
Battery management, High speed switch, low power DC to DC converter.

Features

- Low $R_{DS(on)}$
- SOT-23 package
- Halogen-Free Product

V_{DSS}	$R_{DS(on)}$ Typ	I_D
20V	16.5mΩ	6.5A

Equivalent Circuit & Pinning



PIN1 : Gate

PIN 2 : Source

PIN 3 : Drain

Absolute Maximum Ratings(Ta=25°C)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±12	V
Drain Current – Continuous		I_D	6.5	A
Pulsed Drain Current		I_{DM}	38	A
Power Dissipation		P_D	1.3	W
Storage Temperature Range		T_{stg}	-55~150	°C
Maximum Junction-to-Ambient	$t \leq 10s$	R_{JA}	90	°C/W
Maximum Junction-to-Ambient	Steady-State		125	
Maximum Junction-to-Lead	Steady-State	R_{JL}	80	

Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS} \quad I_D=250\mu A$	0.5	0.9	1.2	V
Drain–Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0 \quad I_D=250\mu A$	20	21		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{GS}=0 \quad V_{DS}=20V$			1.0	μA
Gate–Body Leakage.	I_{GSS}	$V_{GS}=\pm 12V \quad V_{DS}=0V$			±100	nA
Static Drain–Source On–Resistance	$R_{DS(on)1}$	$V_{GS}=4.5V \quad I_D=5.0A$		16.5	33	mΩ
	$R_{DS(on)2}$	$V_{GS}=2.5V \quad I_D=4.5A$		23.5	40	mΩ
	$R_{DS(on)3}$	$V_{GS}=1.8V \quad I_D=4.0A$			51	mΩ
Drain–Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V \quad I_D=1A$		0.78	1.2	V

Electrical Characteristic Curve

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input Capacitance	Ciss	$V_{GS}=0V, V_{DS}=10V$ $f=1MHz$		860		pF
Output Capacitance	Coss			800		
Reverse Transfer Capacitance	Crss			495		
Gate resistance	Rg	$V_{GS}=0V, V_{DS}=0V$ $f=1MHz$		4.9		Ω
Total Gate Charge	Qg(4.5V)	$V_{GS}=4.5V, V_{DS}=10V$ $I_D=6.5A$		7		nC
Gate Source Charge	Qgs			1		
Gate Drain Charge	Qgd			2		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=4.5V, V_{DS}=10V$ $R_L=1.54\Omega, R_{GEN}=3\Omega$		7		ns
Turn-On Rise Time	t_r			10		
Turn-Off Delay Time	$t_{d(off)}$			32		
Turn-Off Fall Time	t_f			11		

Electrical Characteristic Curve

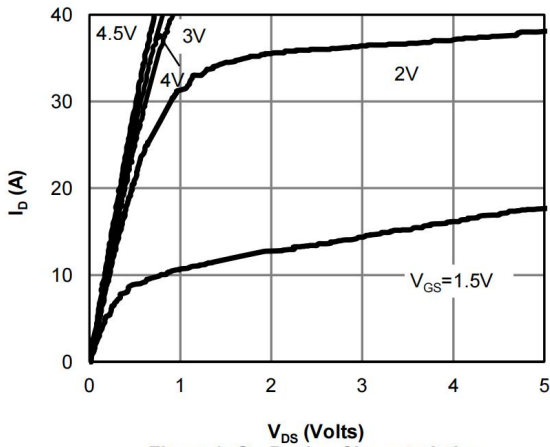


Figure 1: On-Region Characteristics

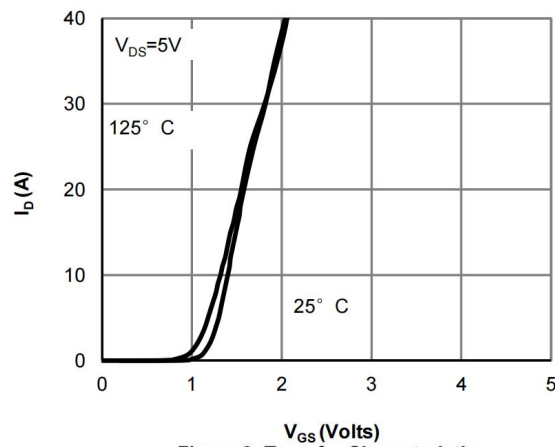


Figure 2: Transfer Characteristics

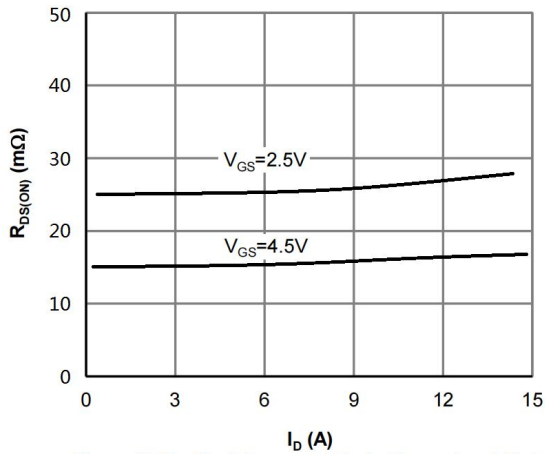


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

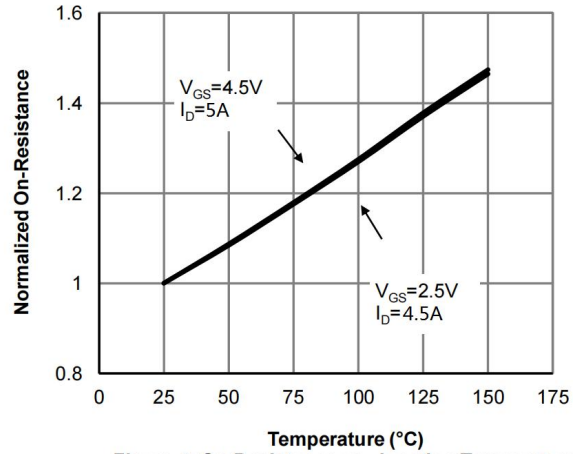


Figure 4: On-Resistance vs. Junction Temperature

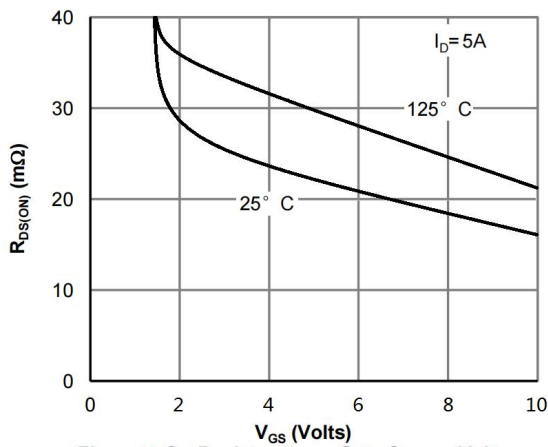


Figure 5: On-Resistance vs. Gate-Source Voltage

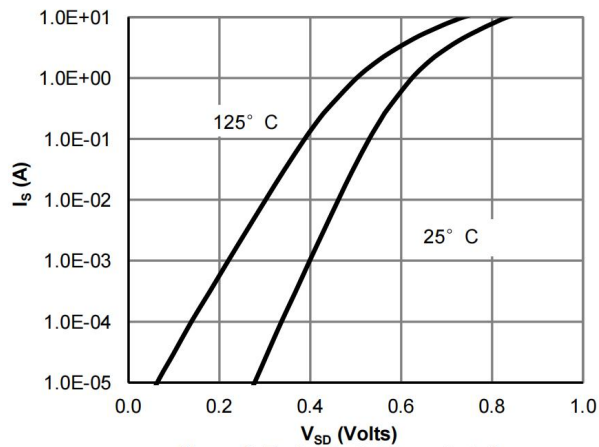
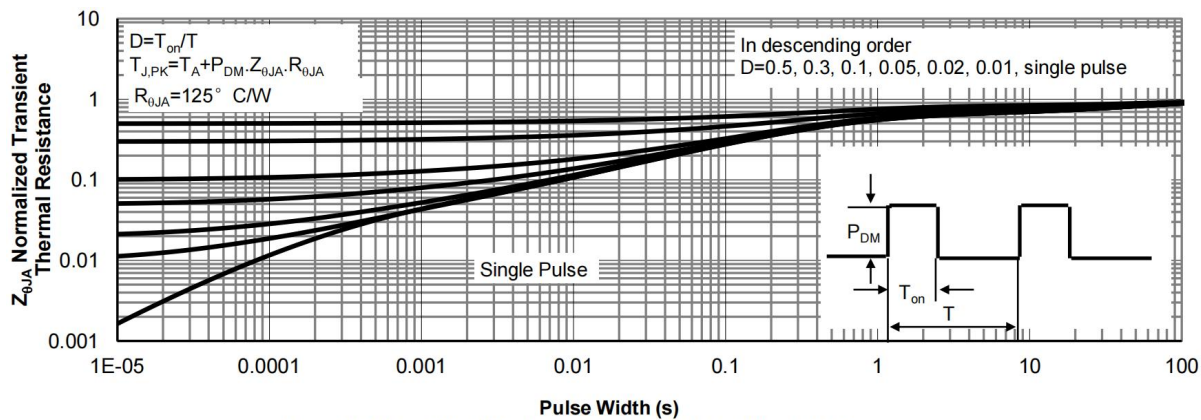
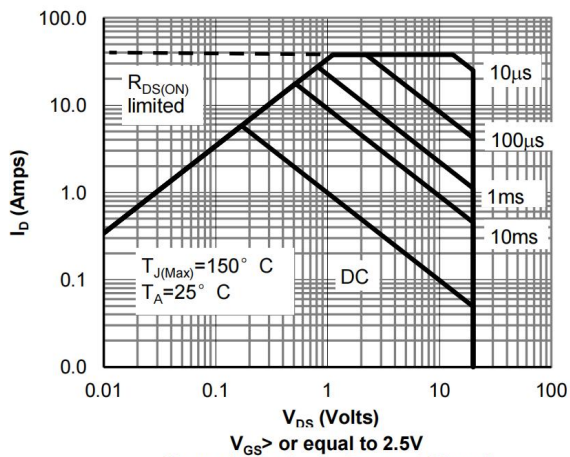
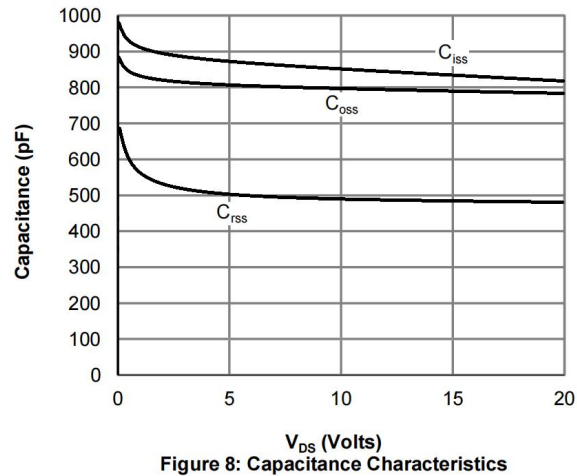
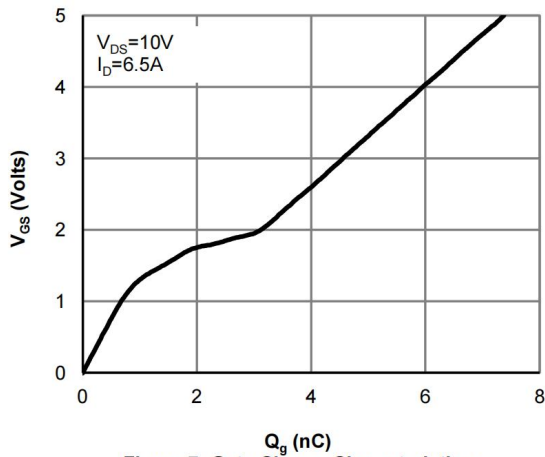
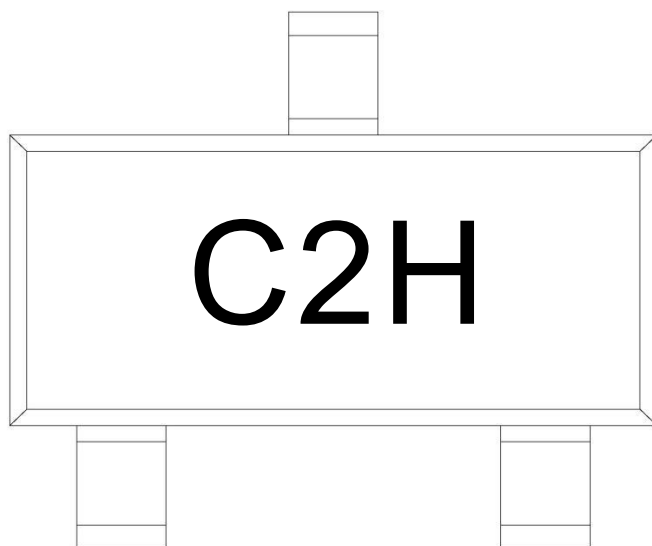


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve



Marking Instructions



Note:

C2 : Product Type Code

H: Company Code.

Packaging SPEC.

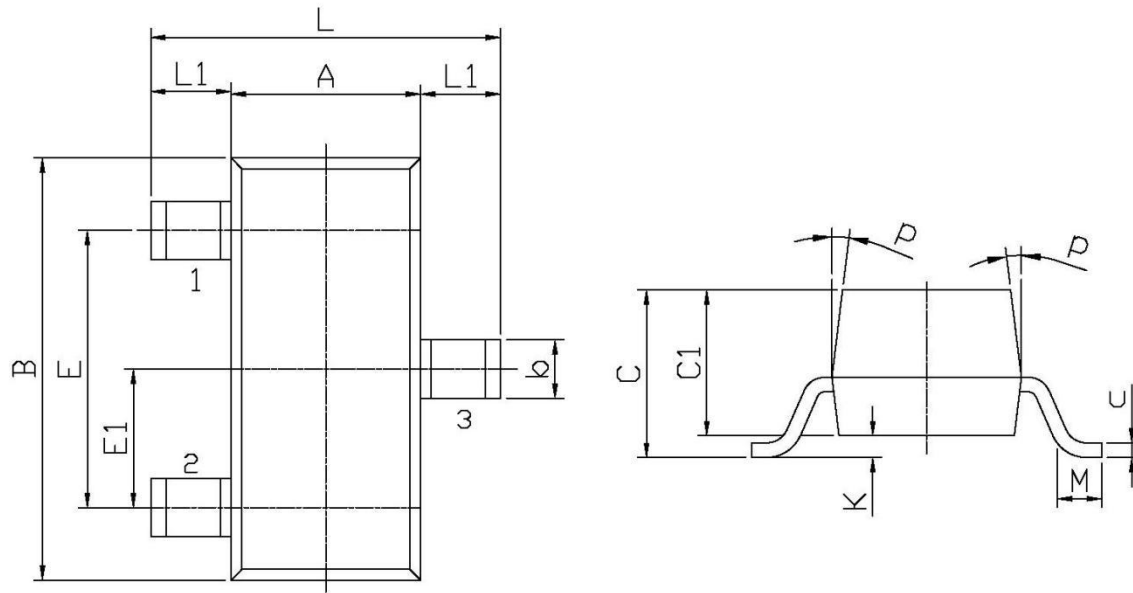
REEL INFORMATION

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
SOT-23	3,000	10	30,000	6	180,000	7" x8	180×120×180	390×385×205

Package Outline Dimensions

SOT-23

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.2	2.7	C	1.30Max	
L1	0.45	0.65	C1	0.90	1.20
A	1.15	1.50	c	0.05	0.20
B	2.70	3.10	K	0	0.10
E	1.70	2.10	M	0.20MIN	
E1	0.85	1.05	P	7°	
b	0.35	0.55			