

Description

This 30V 5.5A N-Channel MOSFET in a SOT-23-3 Plastic Package.

Applications

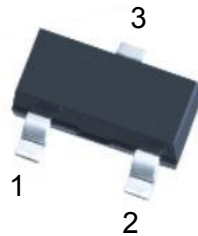
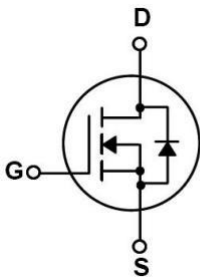
This device is suitable for use as a load switch or in PWM applications.

Features

- $V_{DS} (V) = 30V$
- $I_D = 5.5 A (V_{GS} = 20V)$
- $R_{DS(ON)} < 31m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 43m\Omega (V_{GS} = 4.5V)$
- Halogen-Free Product.

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

Equivalent Circuit & Pinning



PIN1 : Gate

PIN 2 : Source

PIN 3 : Drain

Absolute Maximum Ratings(Ta=25℃)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DS}	30	V
Drain Current – Continuous		I _D	5.5	A
Pulsed Drain Current		I _{DM}	19	A
Gate-Source Voltage		V _{GS}	±20	V
Total Power Dissipation		P _D	1.4	W
Operating and Storage Junction Temperature Range		T _J , T _{STG}	-55 to 150	°C
Maximum Junction-to-Ambient	≤10s	R _{θJA}	90	°C/W
Maximum Junction-to-Ambient	Steady-State		125	
Maximum Junction-to-Lead		R _{θJL}	80	

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V \quad I_D=250\mu A$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=24V \quad V_{GS}=0V$			1	μA
		$V_{DS}=24V \quad V_{GS}=0V$ $T_J=55^\circ C$			5	μA
Gate–Body Leakage.	I_{GSS}	$V_{GS}=\pm 20V \quad V_{DS}=0V$			±0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS} \quad I_D=250\mu A$	1.0	1.5	2.5	V
Static Drain–Source On–Resistance	$R_{DS(on)(1)}$	$V_{GS}=10V \quad I_D=5.5A$		20	31	mΩ
	$R_{DS(on)(2)}$	$V_{GS}=4.5V \quad I_D=4A$		26	43	
Drain–Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V \quad I_S=1A$		0.77	1	V
Input Capacitance	C_{iss}	$V_{DS}=25V \quad V_{GS}=0V$ $f=1MHz$		380		pF
Output Capacitance	C_{oss}			165		
Reverse Transfer Capacitance	C_{rss}			15		
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	$t_{d(on)}$	$V_{GS}=10V \quad R_L=3\Omega$ $V_{DS}=15V \quad R_{GEN}=3\Omega$		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

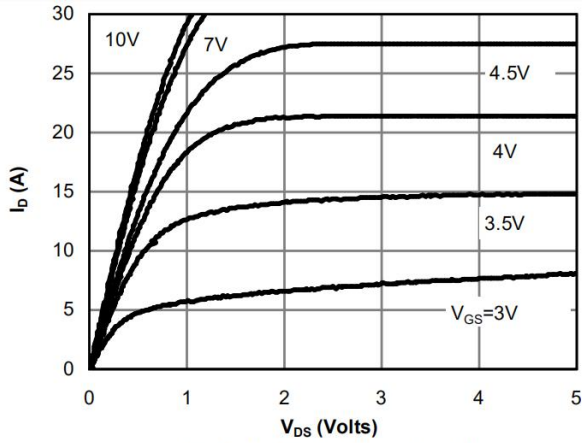


Fig 1: On-Region Characteristics

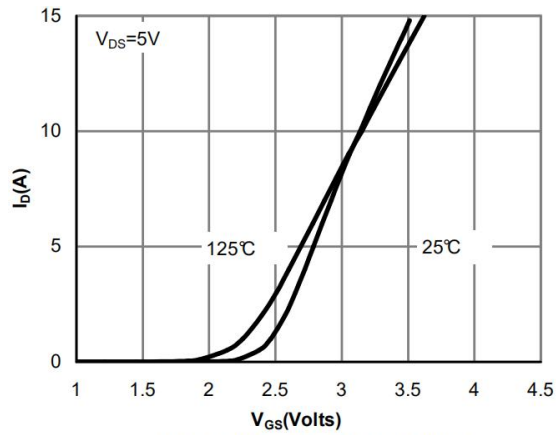


Figure 2: Transfer Characteristics

b

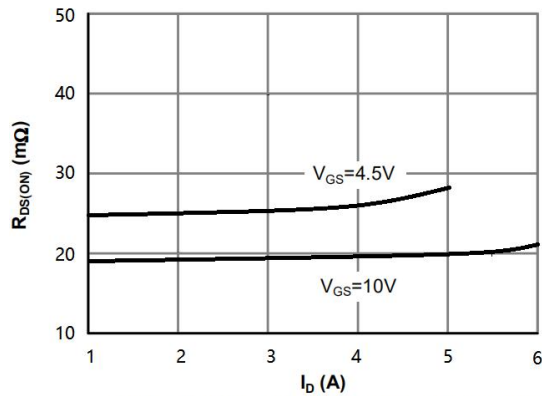


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

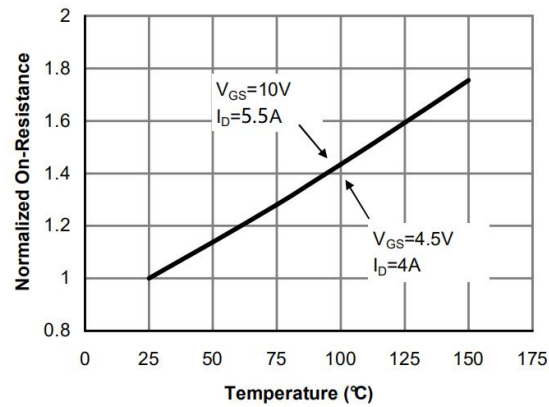


Figure 4: On-Resistance vs. Junction Temperature

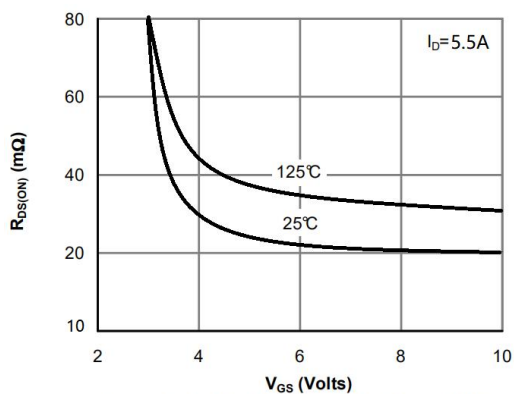


Figure 5: On-Resistance vs. Gate-Source Voltage

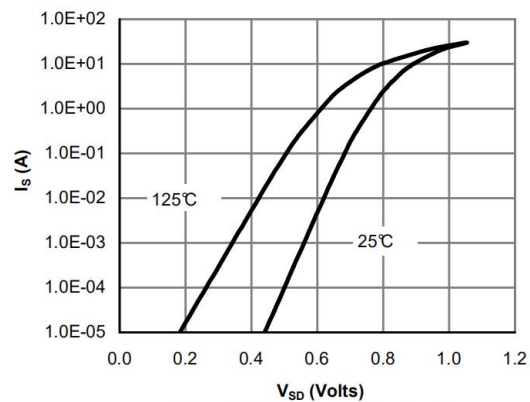
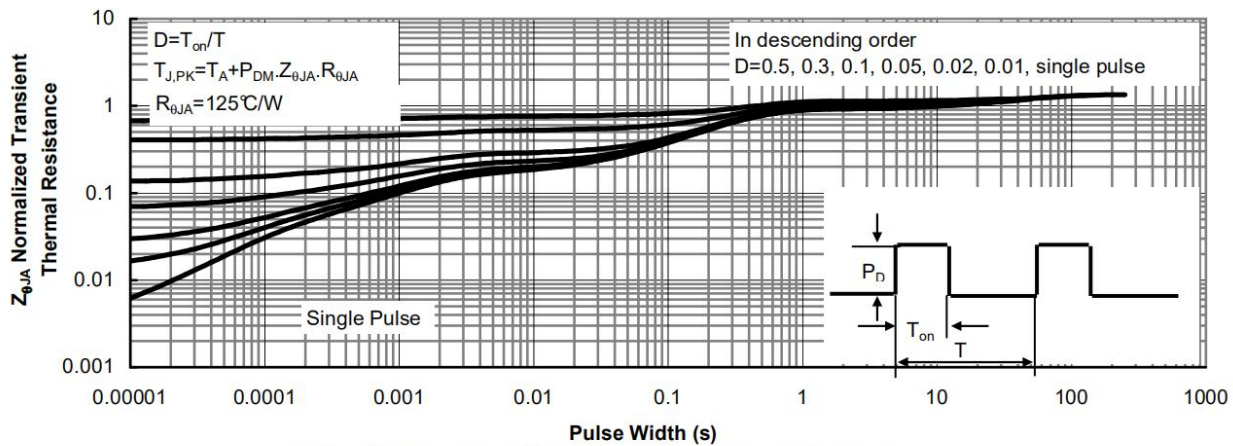
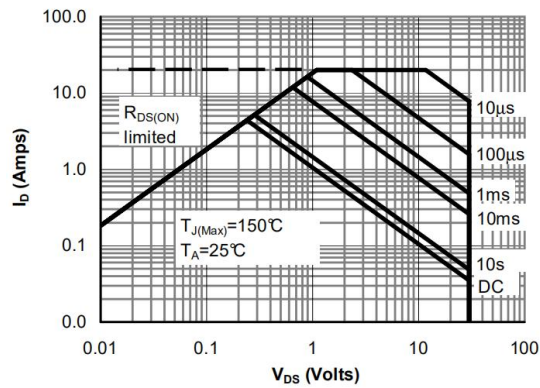
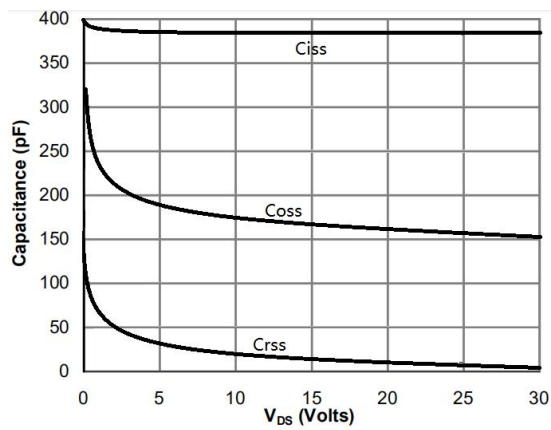
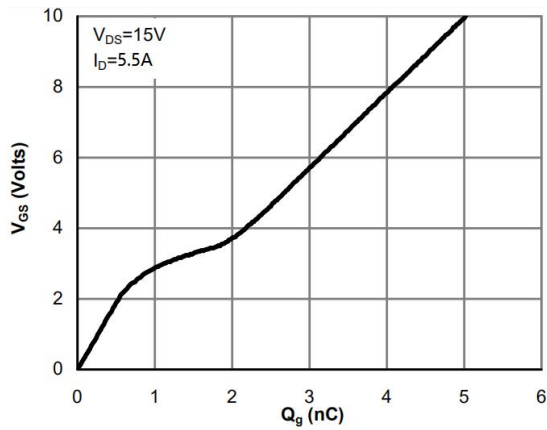
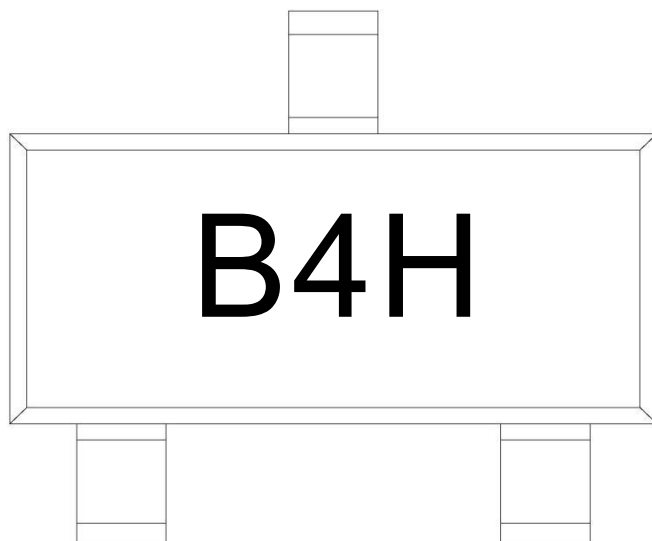


Figure 6: Body-Diode Characteristics

Electrical Characteristic Curve



Marking Instructions



Note:

B4: Product Type Code.

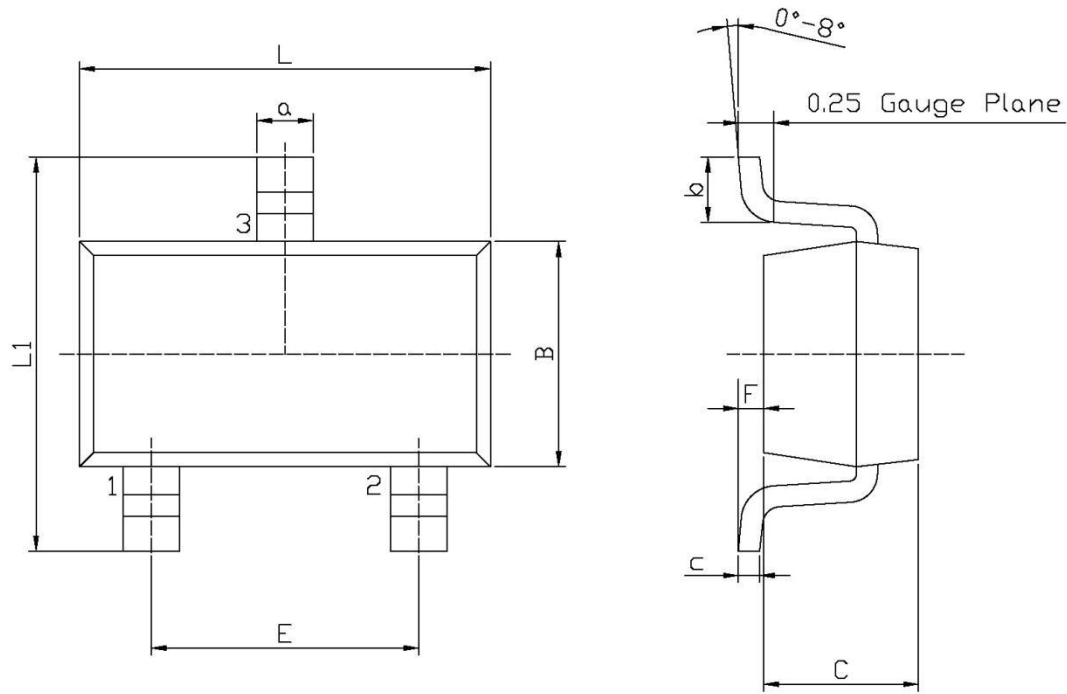
H: Company Code.

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	3,000	10	30,000	4	120,000	7" x8	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	a	0.35	0.50
B	1.50	1.70	c	0.10	0.20
C	0.90	1.30	b	0.35	0.55
L1	2.60	3.00	F	0	0.15
E	1.80	2.00			

SOT23-3