

Description

This 50V 220mA N-Channel MOSFET in a SOT-23 Plastic Package.

Features

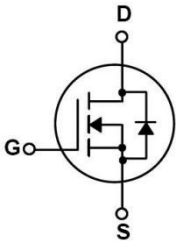
- Low $R_{DS(on)}$
- Rugged and reliable
- Compact industry standard SOT-23 surface mount Package
- Halogen Free Product

Applications

Low current applications such as small servo motor control, power MOSFET gate drivers, and other switching applications.

V_{DSS}	$R_{DS(on)}$ Typ	I_D
50V	0.7Ω	220mA

Equivalent Circuit & Pinning



PIN1 : Gate PIN 2 : Source

PIN 3 : Drain

Absolute Maximum Ratings(Ta=25℃)

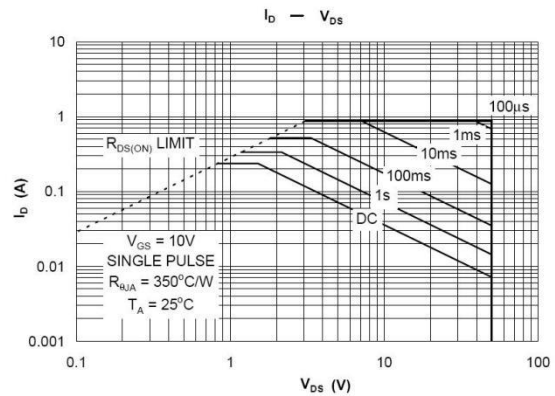
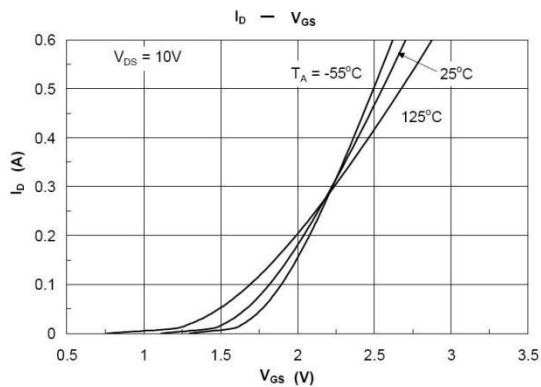
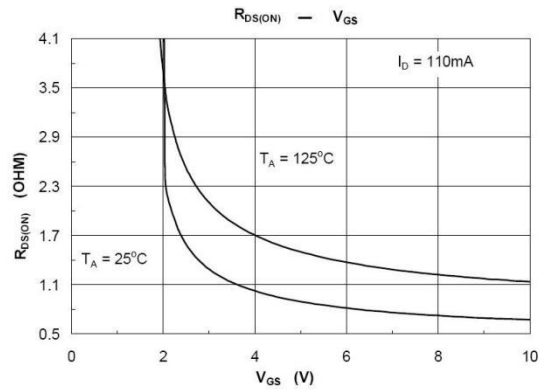
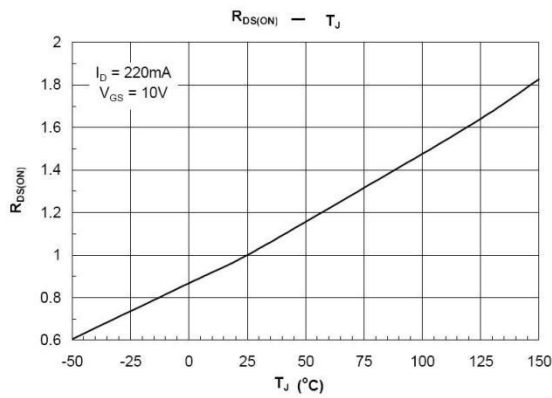
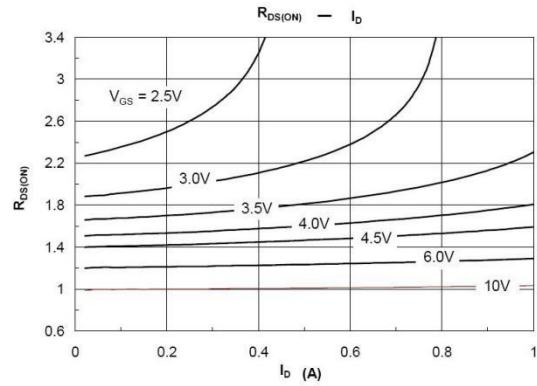
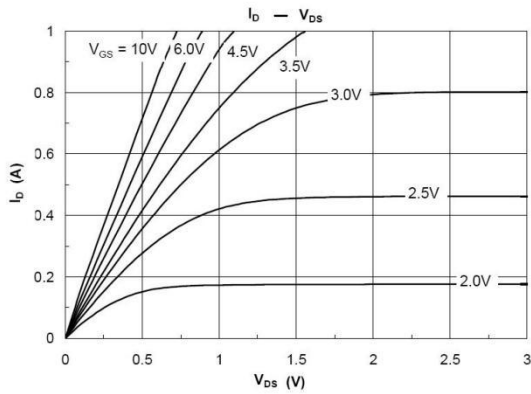
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	50	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current – Continuous	I_D	220	mA
Peak Drain Current	I_{DM}	880	mA
Power Dissipation	P_D	360	mW
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	350	℃/W
Storage Temperature Range	T_{stg}	-55~150	℃

Electrical Characteristics(Ta=25℃)

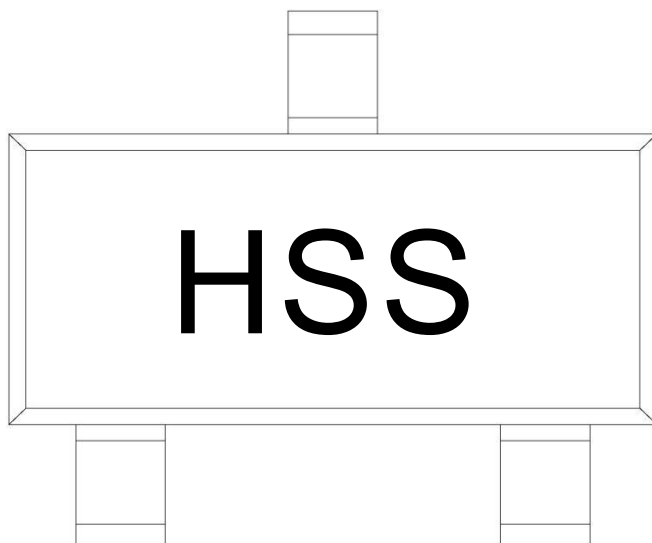
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Zero Gate Voltage Drain Current	$I_{DSS(1)}$	$V_{GS}=0$ $V_{DS}=50V$			0.5	μA
	$I_{DSS(2)}$	$V_{GS}=0$ $V_{DS}=30V$			0.1	μA
Gate–Body Leakage.	I_{GSS}	$V_{DS}=0V$ $V_{GS}=\pm 20$			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=1.0mA$	0.8	1.3	1.5	V
Static Drain–Source On–Resistance	$R_{DS(on)(1)}$	$V_{GS}=10V$ $I_D=220mA$		0.7	3.5	Ω
	$R_{DS(on)(2)}$	$V_{GS}=4.5V$ $I_D=220mA$		1.0	6.0	Ω
Forward Transconductance	g_{FS}	$V_{DS}=10V$ $I_D=220mA$	0.12	0.5		S
Drain–Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=440mA$		0.8	1.4	V
Input Capacitance	C_{iss}	$V_{DS}=10V$ $V_{GS}=0V$ $f=1.0MHz$			50	pF
Output Capacitance	C_{oss}				25	
Reverse Transfer Capacitance	C_{rss}				8	
Gate Resistance	R_G	$V_{GS}=15mV$ $f=1.0MHz$		9		Ω
Turn–On Delay Time	$t_{d(on)}$	$V_{DD}=30V$ $I_D=290mA$ $V_{GS}=10V$ $R_{GEN}=25\Omega$		2.5	5	ns
Turn–On Rise Time	t_r			9	18	ns
Turn–Off Delay Time	$t_{d(off)}$			20	36	ns
Turn–Off Fall Time	t_f			7	14	ns



Electrical Characteristic Curve



Marking Instructions



Note:

H: Halogen Free

SS: Product Type.

Packaging SPEC.

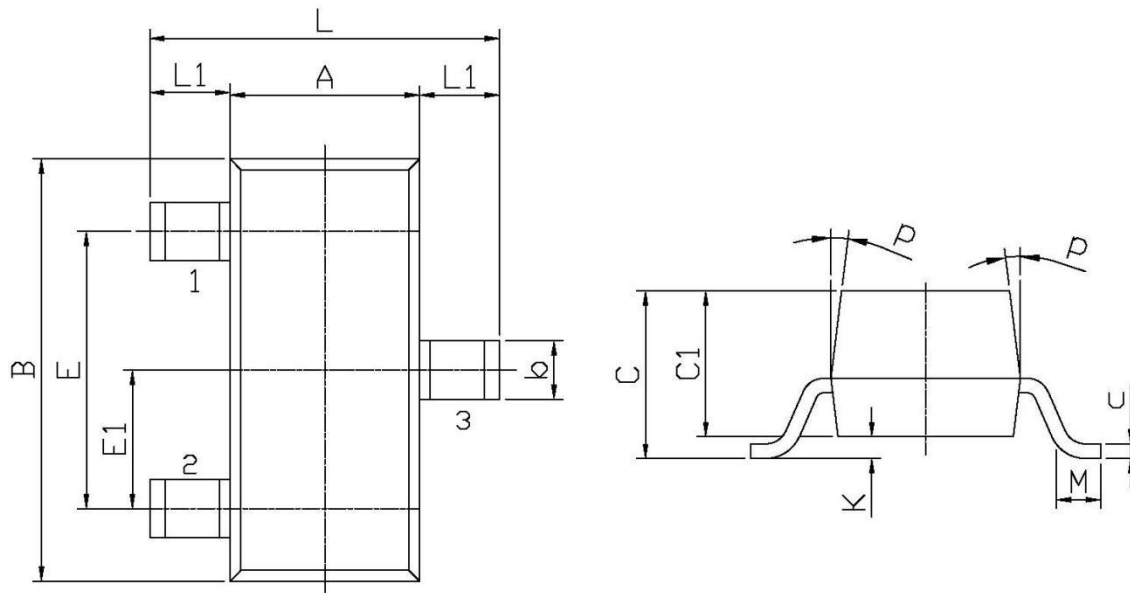
REEL INFORMATION

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			