

## Descriptions

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

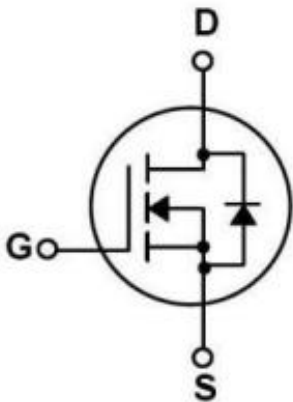
## Features

- Low RDS(on)
- Rugged and reliable
- Compact industry standard SOT-23 surface mount Package
- Halogen Free Product

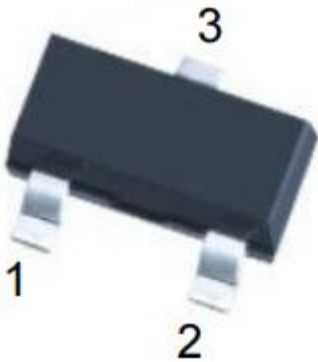
## Applications

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

## Equivalent Circuit



## Pinning



PIN1: Gate

PIN 2: Source

PIN 3: Drain

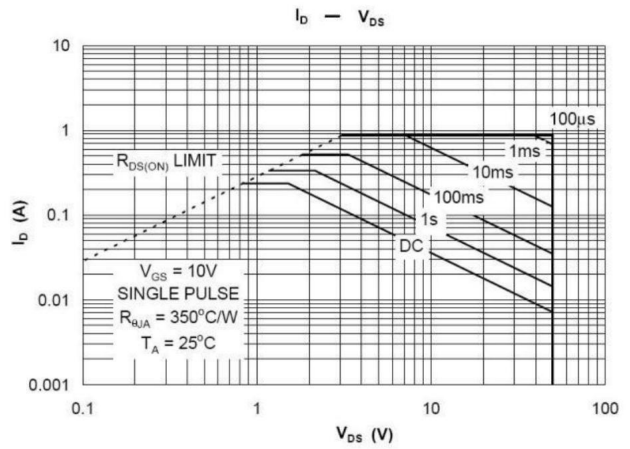
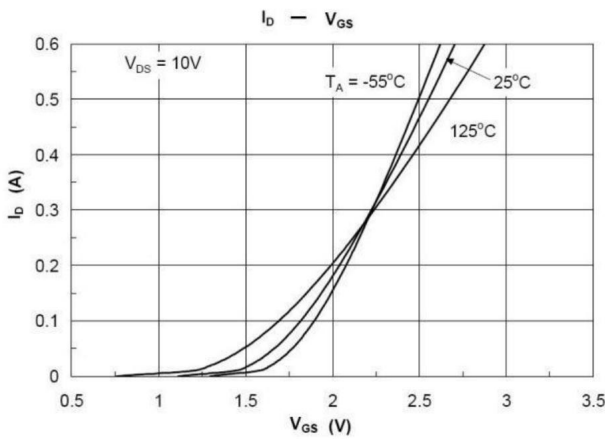
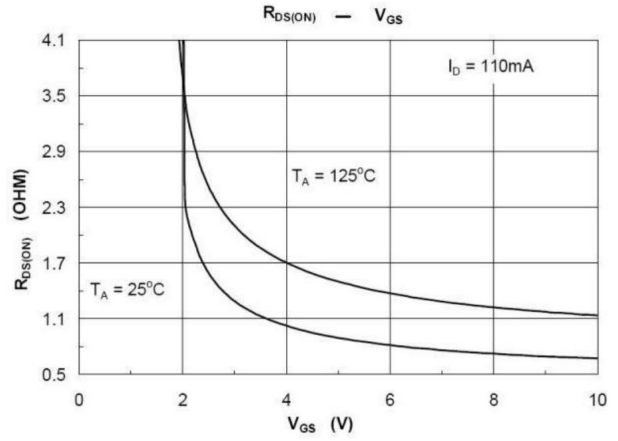
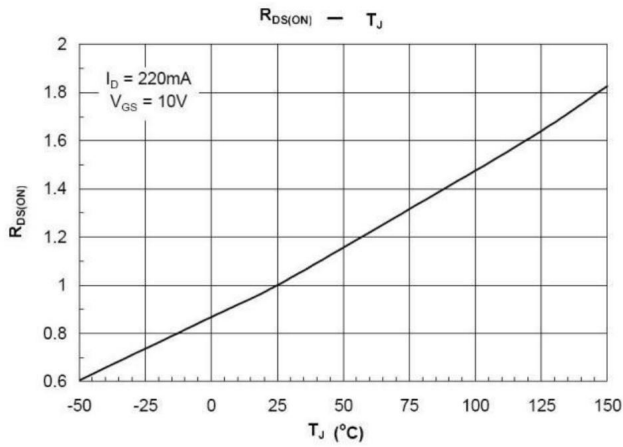
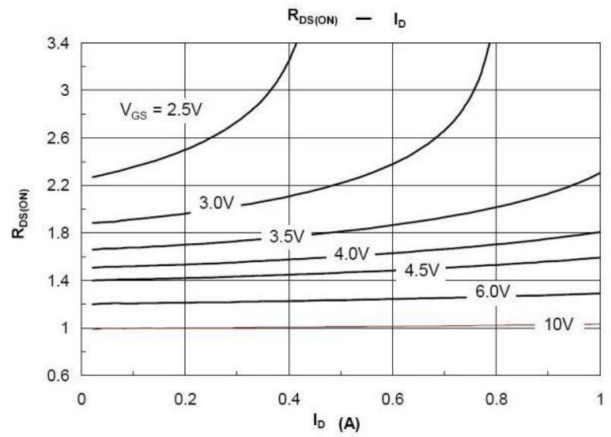
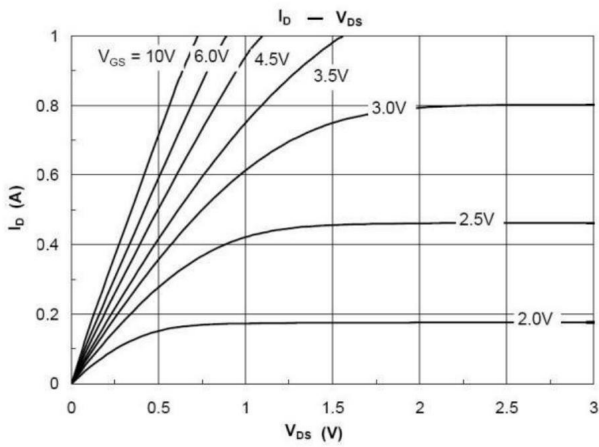
## Absolute Maximum Ratings(Ta=25°C)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DSS}$	50	V
Gate-Source Voltage	$V_{GSS}$	±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	°C/W
Storage Temperature Range	$T_{stg}$	-55~150	°C

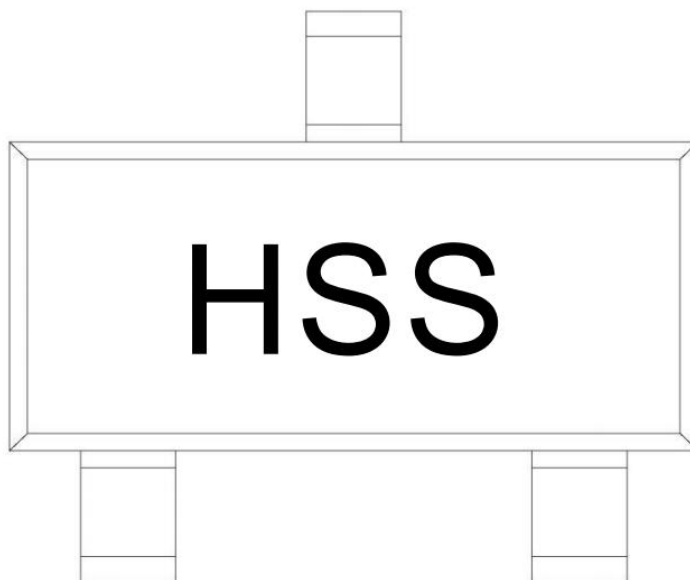
## Electrical Characteristics(Ta=25°C)

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 <sup>3</sup> )		
	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	180x120x180	390x385x205

**Package Outline Dimensions**

SOT-23

单位: mm

