



SSC138GS6

N-Channel Enhancement Mode MOSFET

➤ Features

VDS	VGS	RDS(on) Typ.	ID
50V	±20V	2.5R@5V0	0.2A
		5.6R@2V75	

➤ Description

This N-Channel enhancement mode field effect transistors are produced using proprietary, high cell density. These products have been designed to minimize on-state resistance while provide rugged, reliable, and fast switching performance. These products are particularly suited for low voltage, low current applications.

➤ Applications

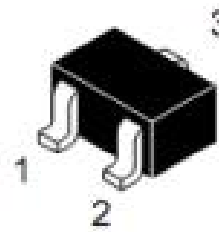
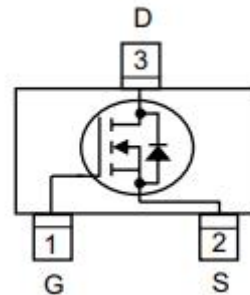
- Load Switch
- Motor control
- Power Mos gate drivers

➤ Ordering Information

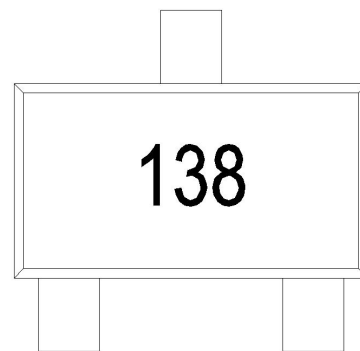
Device	Package	Shipping
SSC138GS6	SOT23	3000/Reel

➤ Pin configuration

Top view



SOT23



Marking

**Absolute Maximum Ratings**($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Ratings	Unit
V_{DSS}	Drain-to-Source Voltage	50	V
V_{GSS}	Gate-to-Source Voltage	± 20	V
I_D	Continuous Drain Current ^a	200	mA
I_{DM}	Pulsed Drain Current ^b	800	mA
P_D	Power Dissipation ^a	TC=25 $^{\circ}\text{C}$ 300	mW
T_J	Operation junction temperature	-55 to 150	$^{\circ}\text{C}$
T_{STG}	Storage temperature range	-55 to 150	$^{\circ}\text{C}$

➤ Thermal Resistance Ratings($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Typical	Maximum	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance ^a		357	$^{\circ}\text{C}/\text{W}$

Note:

- The value of $R_{\theta JA}$ is measured with the device mounted on 1 in² FR-4 board with 2oz.copper, in a still air environment with $T_A=25^{\circ}\text{C}$. The value in any given application depends on the user is specific board design. The current rating is based on the $t \leq 10\text{s}$ thermal resistance rating.
- Repetitive rating, pulse width limited by junction temperature.

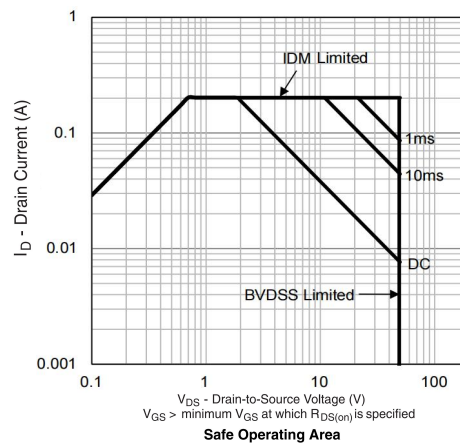
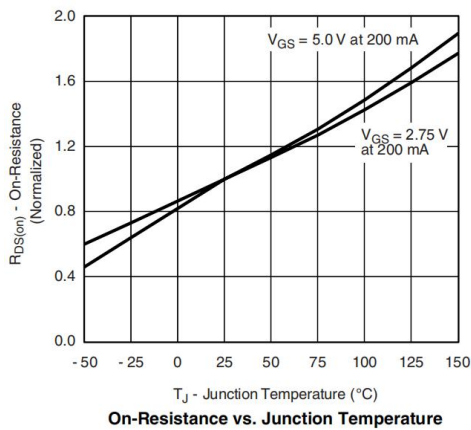
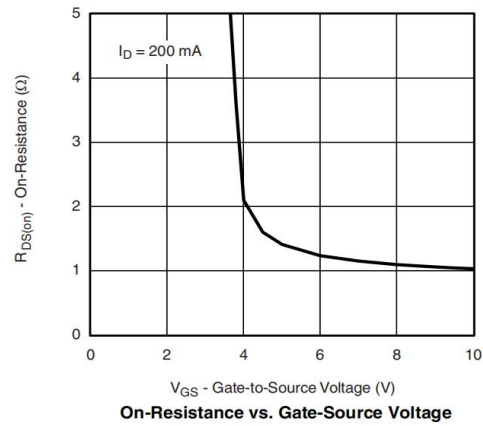
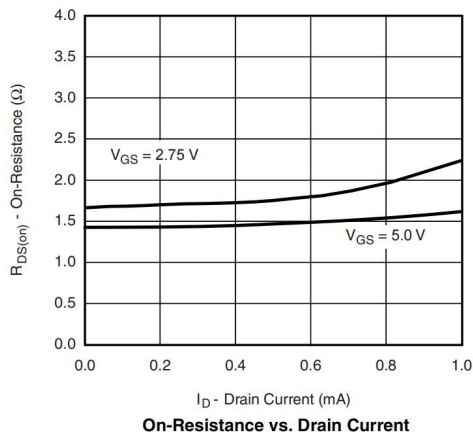
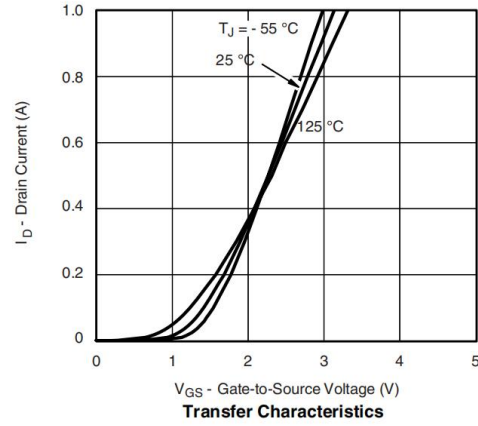
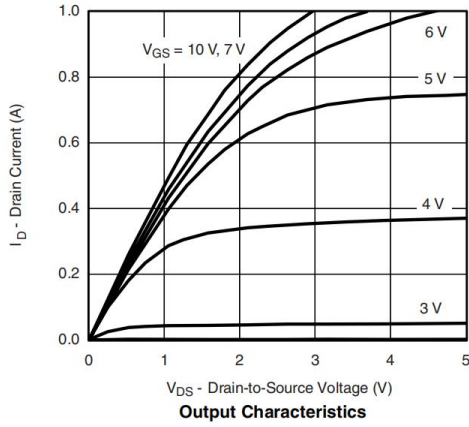


➤ **Electronics Characteristics**($T_A=25^{\circ}\text{C}$ unless otherwise noted)

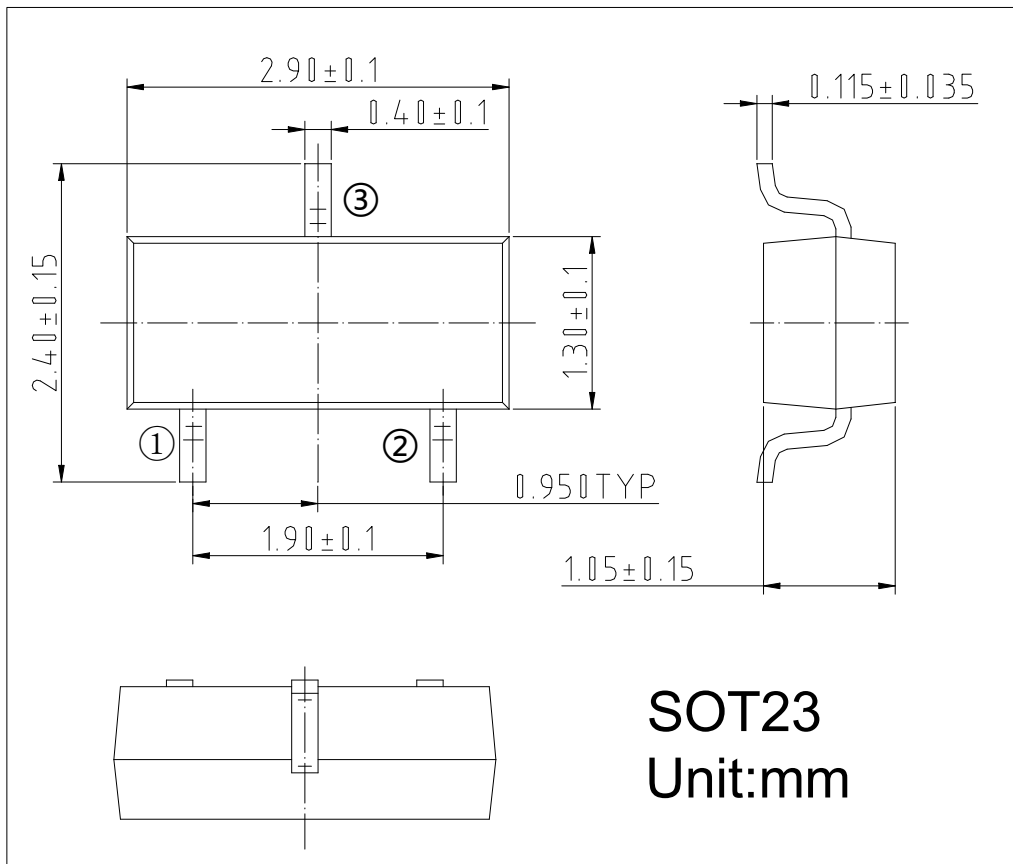
Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	50			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5		1.5	V
$R_{DS(on)}$	Drain-Source On-Resistance	$V_{GS}=5V, I_D=0.2A$		2.5	3.5	Ω
		$V_{GS}=2.75V, I_D=0.2A$		5.6	10	
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=25V, V_{GS}=0V$			0.1	μA
		$V_{DS}=50V, V_{GS}=0V$			0.5	
I_{GSS}	Gate-Source leak current	$V_{GS}=\pm 20V, V_{DS}=0V$			± 100	nA
G_{FS}	Transconductance	$V_{DS}=25V, I_D=0.2A, f=1.0kHz$	100			mS
V_{SD}	Forward Voltage	$V_{GS}=0V, I_S=0.2A$		0.8	1.4	V
C_{iss}	Input Capacitance	$V_{DS}=25V, V_{GS}=0V, f=1MHz$		42		pF
C_{oss}	Output Capacitance			12		
C_{rss}	Reverse Transfer Capacitance			4		
$T_{D(ON)}$	Turn-on delay time	$V_{DS}=30V, I_D=0.2A, R_G=50\Omega$			20	ns
$T_{D(OFF)}$	Turn-off delay time				20	



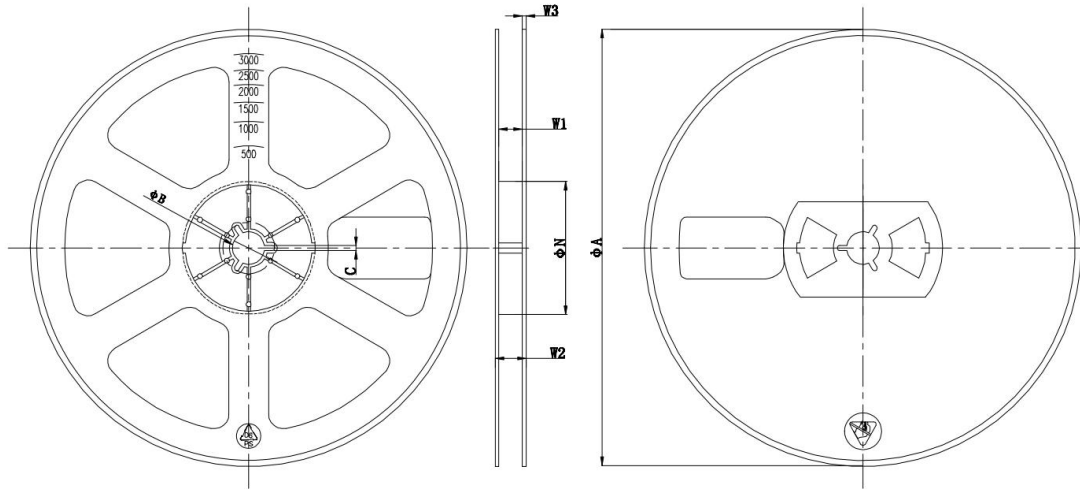
Typical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)



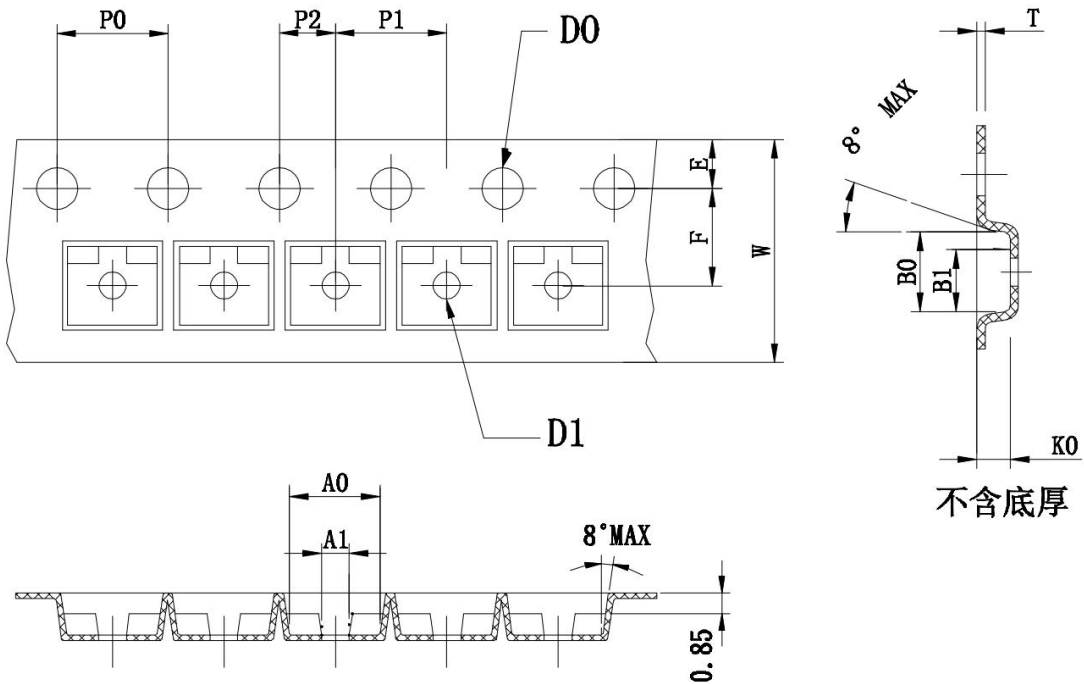
➤ Package Information



➤ Tape and Reel



ΦA	ΦN	ΦB	C	W1	W2	W3
178±2	54±2	13.2±0.3	2.2±0.3	9.5±1	13 _{max}	1.4±0.4



Symbol	A0	A1	B0	B1	K0	D0	D1	P0
Spec	3.15±0.10	1.15±0.10	2.80±0.10	2.15±0.10	1.30±0.10	1.55±0.10	1.10±0.10	4.00±0.10
Symbol	P1	W	E	P2	T	10*P0	F	
Spec	4.00±0.10	8.00±0.10	1.75±0.10	2.00±0.10	0.21±0.02	40.00±0.10	3.50±0.10	



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