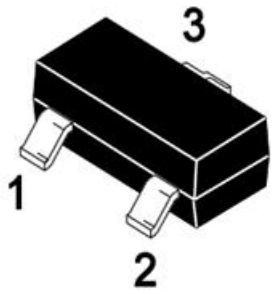
SSC8164GS6

N-Channel Small Switching MOSFET with ESD Protection

➢ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D	ESD
60V	±20V	1.1Ω@10V	0.5A	500V
		1.5Ω@4.5V		

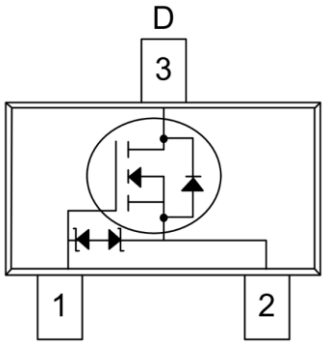
➢ Pin configuration



SOT-23

➢ Description

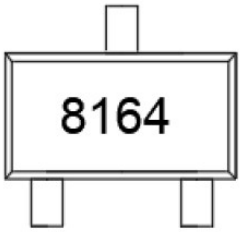
This device is an N-Channel enhancement mode MOSFET which is produced with high cell density and DMOS trench technology. This device particularly suits low voltage applications, especially for battery powered circuits, the tiny and thin outline saves PCB consumption.



Pin Configuration (Top View)

➢ Applications

- Load Switch
- Portable Devices
- DCDC Conversion



Marking

➢ Ordering Information

Device	Package	Shipping	MSL
SSC8164GS6	SOT-23	3000/Reel	3

➢ Absolute Maximum Ratings (T_A=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Unit
V_{DSS}	Drain-to-Source Voltage	60	V
V_{GSS}	Gate-to-Source Voltage	±20	V
I_D	Continuous Drain Current [a]	0.5	A
I_{DM}	Pulsed Drain Current [b]	1	A
P_D	Power Dissipation [c]	0.85	W
P_{DSM}	Power Dissipation [a]	0.36	W
T_J	Operation junction temperature	-55~150	℃
T_{STG}	Storage temperature range	-55~150	℃

➢ Thermal Resistance Ratings (T_A=25℃ unless otherwise noted)

Symbol	Parameter	Typical	Maximum	Unit
$R_{\theta JA}$	Junction-to-Ambient Thermal Resistance [a]		360	℃/W
$R_{\theta JC}$	Junction-to-Case Thermal Resistance		155	

Note:

a. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in^2 FR-4 board with 2oz.copper, in a still air environment with T_A=25℃.The value in any given application depends on the user is specific board design. The power dissipation is based on the t≤10s thermal resistance rating.

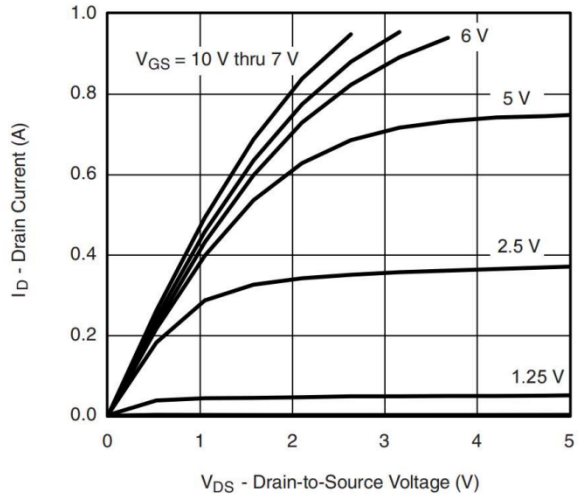
b. Repetitive rating, pulse width limited by junction temperature.

c. The power dissipation P_D is based on $T_{J(MAX)}$=150°C, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

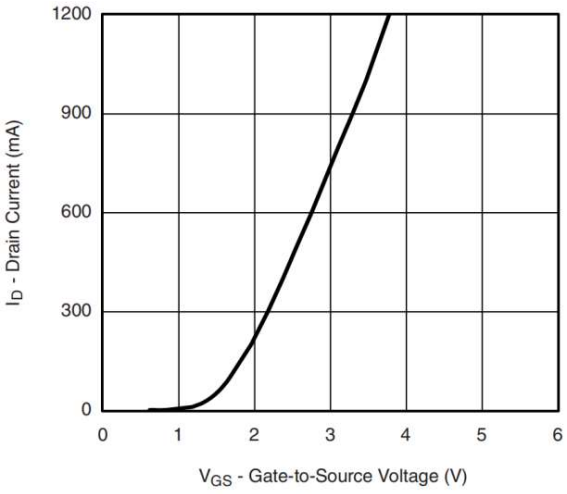
➢ Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250uA	60			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250uA	0.75	1	1.25	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 0.5A		1.1	2.5	Ω
		V_{GS} = 4.5V, I_D = 0.5A		1.5	3.5	
		V_{GS} = 2.5V, I_D = 0.5A		1.7	4	
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 60V, V_{GS} = 0V			1	μA
Gate-Source Leak Current	I_{GSS}	V_{GS} = ±15V, V_{DS} = 0V			±10	μA
Transconductance	G_{FS}	V_{DS} = 10V, I_D =0.2A		0.1		S
Forward Voltage	V_{SD}	V_{GS} = 0V, I_S = 0.2A			1.3	V
Input Capacitance	C_{ISS}	V_{DS} = 25V, V_{GS} = 0V, f = 1MHz		30		pF
Output Capacitance	C_{OSS}			6		
Reverse Transfer Capacitance	C_{RSS}			2.9		
Turn-on Delay Time	$T_{D(ON)}$	V_{GS} = 10V, V_{DS} = 10V, I_D = 100mA		25		ns
Rise Time	Tr			10		
Turn-off Delay Time	$T_{D(OFF)}$			35		
Fall Time	Tf			20		
Total Gate Charge	QG	VGS=10V, VDS=15V, ID=0.2A		0.4		nC
Gate Source Charge	QGS			0.1		
Gate Drain Charge	QGD			0.11		

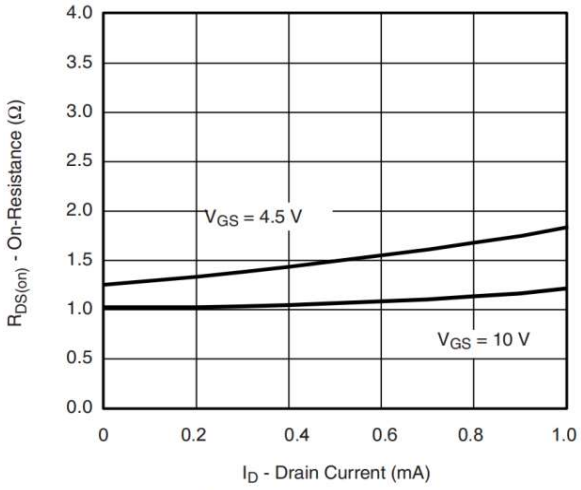
➢ Typical Performance Characteristics (T_A=25℃ unless otherwise noted)



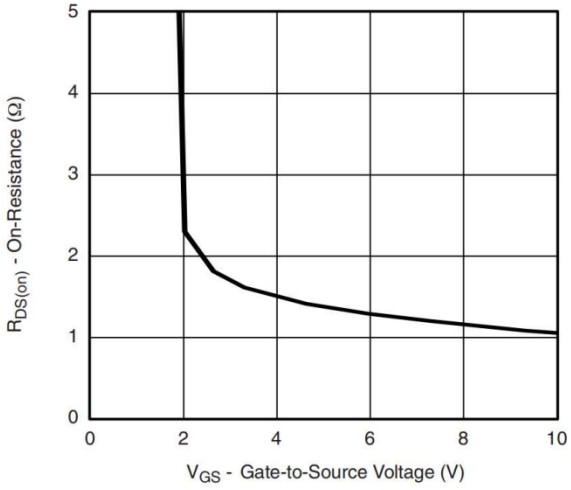
Output Characteristics



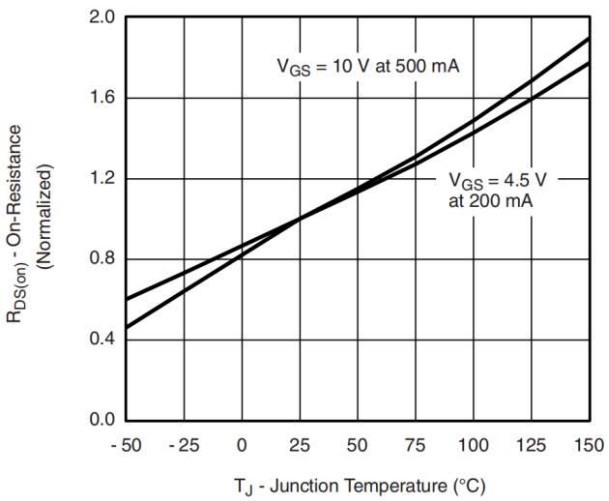
Transfer Characteristics



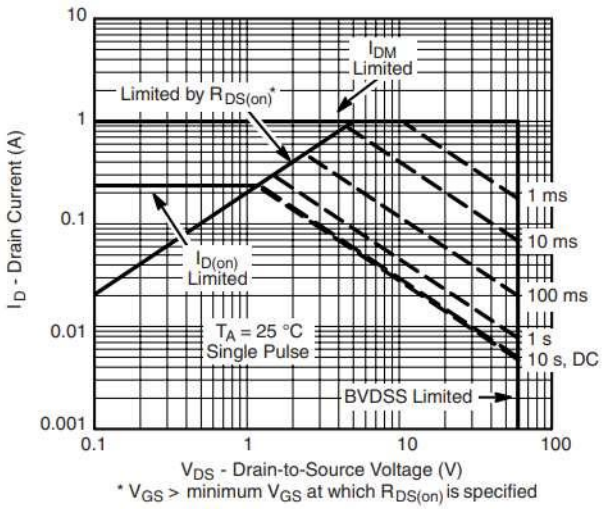
On-Resistance vs. Drain Current



On-Resistance vs. Gate-Source Voltage

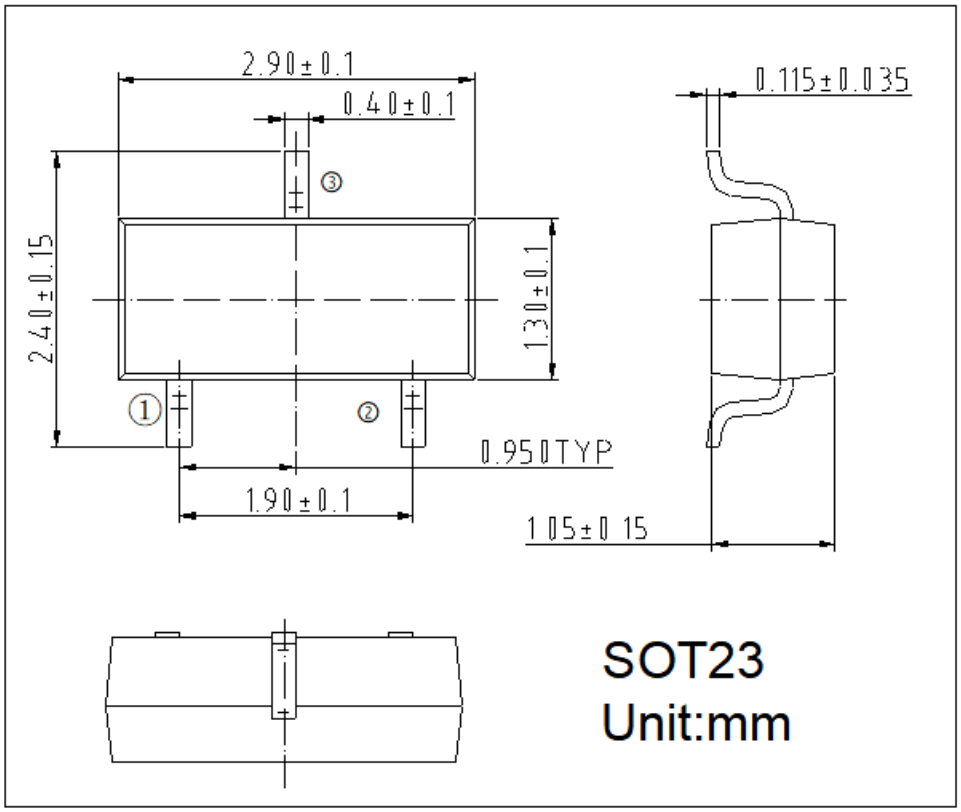


On-Resistance vs. Junction Temperature



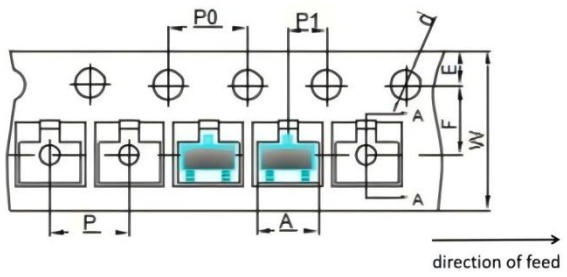
Safe Operating Area

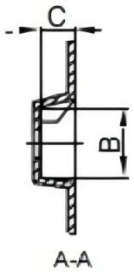
➢ Package Information



➢ SOT-23 Tape and reel

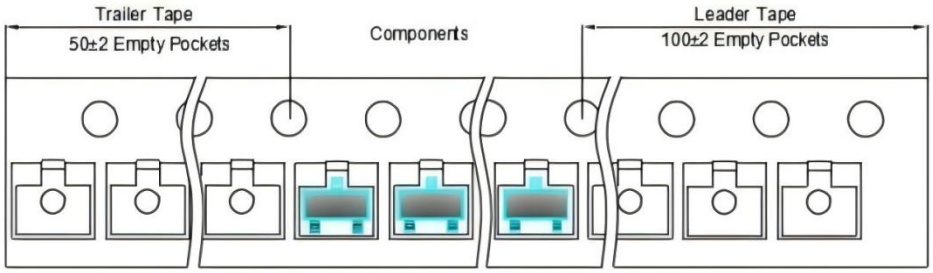
SOT-23 Embossed Carrier Tape





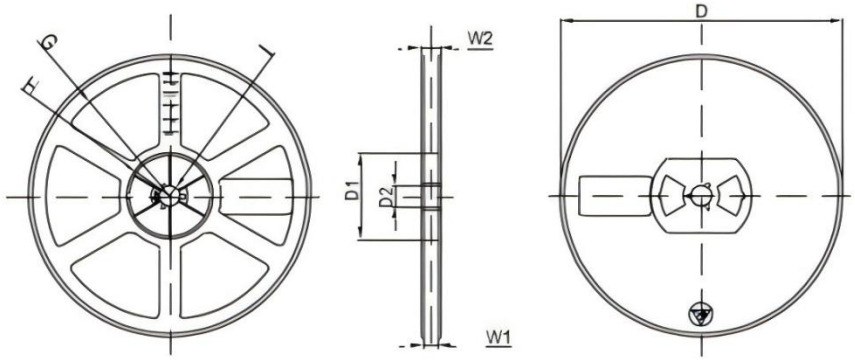
Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15±0.1	2.77±0.1	1.22±0.1	Ø1.50	1.75±0.1	3.5±0.05	4.0±0.1	4.0±0.1	2±0.05	8±0.1

SOT-23 Tape Leader and Trailer



SOT23 带尾(空封 40 格)、带头（空封 100 格）空封数

SOT-23 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	Ø54±0.2	13.3±0.2	R79.00	R26.00	R6.50±0.2	9±0.5	12±0.5

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