

P-Channel Enhancement Mode MOSFET

- **Features**

VDS	VGS	RDSon TYP	ID
-30V	±20V	55mR@-10V	-3A
		68mR@-4V5	

- **General Description**

This P-Channel enhancement mode power FETs are produced with high cell density, DMOS trench technology, which is especially used to minimize on-state resistance. This device is particularly suited for low voltage application such as portable equipment, power management and other battery powered circuits, and low in-line power loss are needed in a very small outline surface mount package.

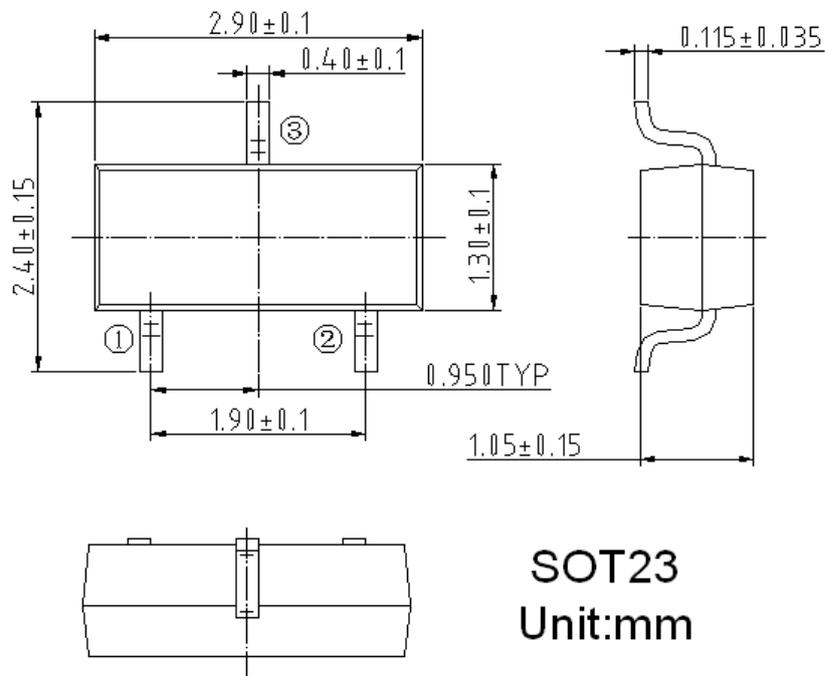
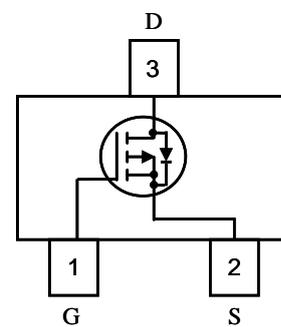
- **Package Information**

- **Applications**

- TFT panel power switch;
- High Side DC/DC Converter
- High Side Driver for Brushless DC Motor
- Portable DVD, DPF

- **Pin configuration**

Top View





SSC8033GS6

● **Absolute Maximum Ratings** @T_A = 25°C unless otherwise noted

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V _{DSS}	-30	V
Gate-Source Voltage	V _{GSS}	±20	V
Continuous Drain Current ^a V _{GS} @4.5V TA = 25°C	I _D	-3	A
Continuous Drain Current ^a V _{GS} @4.5V TA = 70°C		-2	A
Plused Drain Current ^b	I _{DM}	-10	A
Power Dissipation ^a T _C = 25°C	P _D	0.55	W
Power Dissipation ^a T _C = 70°C		0.35	W
Storage and Junction Temperature	T _J T _{STG}	-55~150	°C

● **Thermal Characteristics**

Parameter	Symbol	Typ	Max	Units
Maximum Junction-to-Ambient ^a	R _{θJA}	--	196	°C/W
		--	231	°C/W
Maximum Junction-to-Case	R _{θJC}	--	119	°C/W

● **Order information**

Device	Package	Marking	Shipping
SSC8033GS6	SOT23		3000/Tape&Reel



SSC8033GS6

● **Electrical Characteristics** @T_A = 25°C unless otherwise noted

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = -250 μA	-30	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -30 V, V _{GS} = 0 V	--	--	-1	μA
Gate - Body Leakage, Forward	I _{GSSF}	V _{GS} = +20 V, V _{DS} = 0 V	--	--	100	nA
Gate - Body Leakage, Reverse	I _{GSSR}	V _{GS} = -20 V, V _{DS} = 0 V	--	--	-100	nA
ON CHARACTERISTICS ⁽²⁾						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} = V _{GS} , I _D = -250 μA	-1	-1.6	-2.0	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = -4.5 V, I _D = -3 A	--	68	110	mR
		V _{GS} = -10 V, I _D = -4.1 A	--	55	90	
Forward Transconductance	G _{FS}	V _{DS} = -5 V, I _D = -2.8 A	4	6	--	S
DYNAMIC CHARACTERISTICS ⁽³⁾						
Input Capacitance	C _{ISS}	V _{DS} = -6 V, V _{GS} = 0 V, F = 1.0 MHz	--	680	--	pF
Output Capacitance	C _{OSS}		--	72	--	pF
Reverse Transfer Capacitance	C _{RSS}		--	58	--	pF
SWITCHING CHARACTERISTICS ⁽³⁾						
Turn-On Delay Time	T _{D(ON)}	V _{DD} = -6 V, R _L = 6R, I _D = -1.0 A,	--	--	20	ns
Turn-On Rise Time	T _R	V _{GEN} = -4.5 V, R _G = 6R	---	--	10	
Turn-Off Delay Time	T _{D(OFF)}	V _{DD} = -6 V, R _L = 6R, I _D = -1.0 A,	--	--	65	ns
Turn-Off Fall Time	T _F	V _{GEN} = -4.5 V, R _G = 6R	--	--	45	
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Drain-Source Diode Forward Current ⁽⁴⁾	I _S	--	--	--	-1.35	A
Drain-Source Diode Forward Voltage ⁽²⁾	V _{SD}	V _{GS} = 0 V, I _S = -0.75 A	-0.6	-0.8	-1.3	V

Notes:

a: Surface mounted on FR-4 Board using 1 square inch pad size, 1oz copper

b: Pulse width < 380 μs, Duty Cycle < 2%

c: Maximum junction temperature T_J = 150°C.

Typical Performance Characteristics

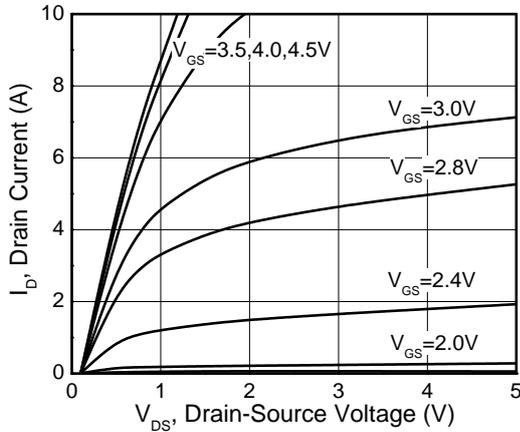


Figure 1. Output Characteristics

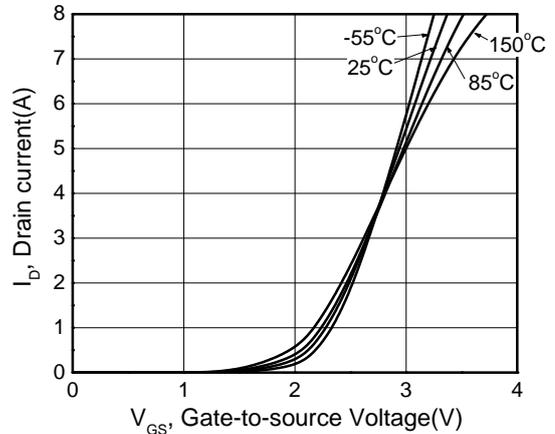


Figure 2. Transfer Characteristics

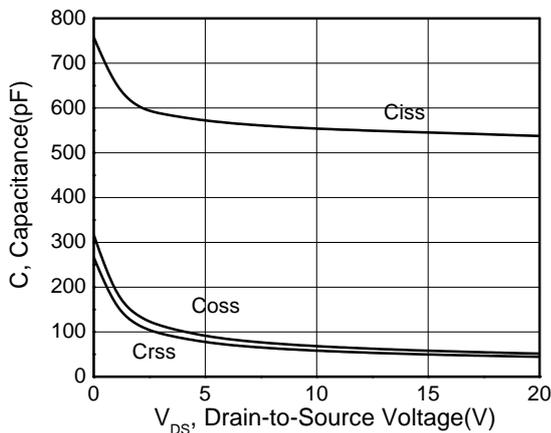


Figure 3. Capacitance

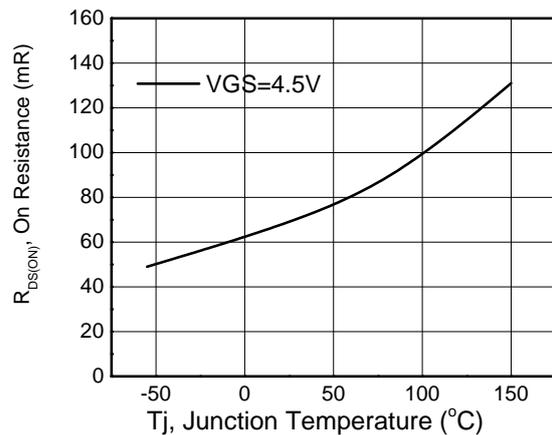


Figure 4. On Resistance Vs. Temperature

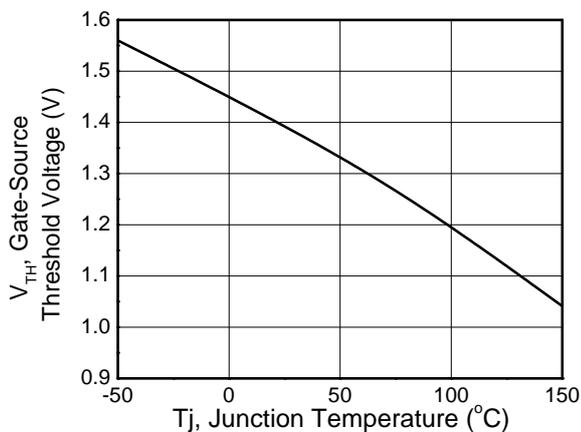


Figure 5. Gate Threshold Vs. Temperature

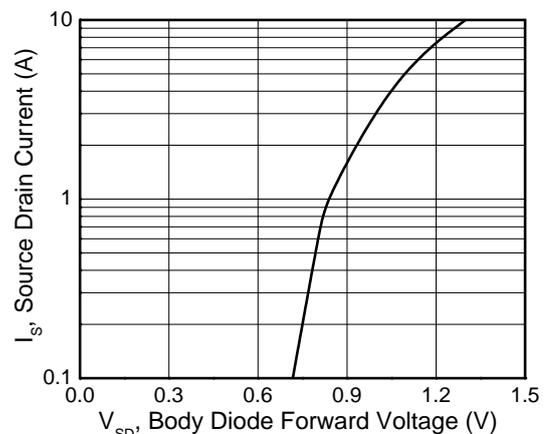


Figure 6. Body Diode Forward Characteristics

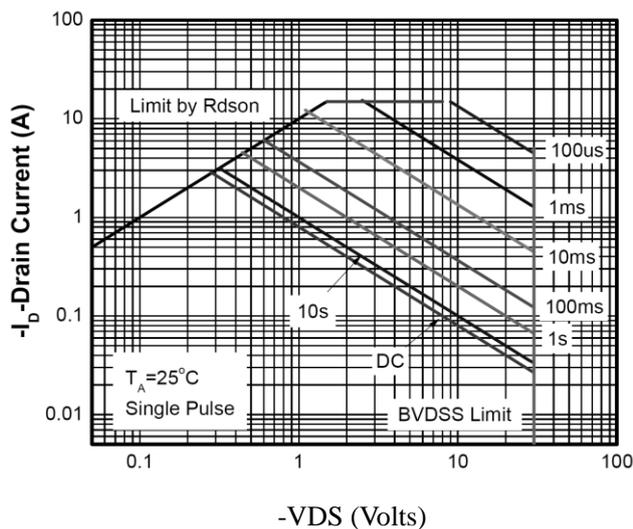


Figure 7 Maxing safe Operation Area

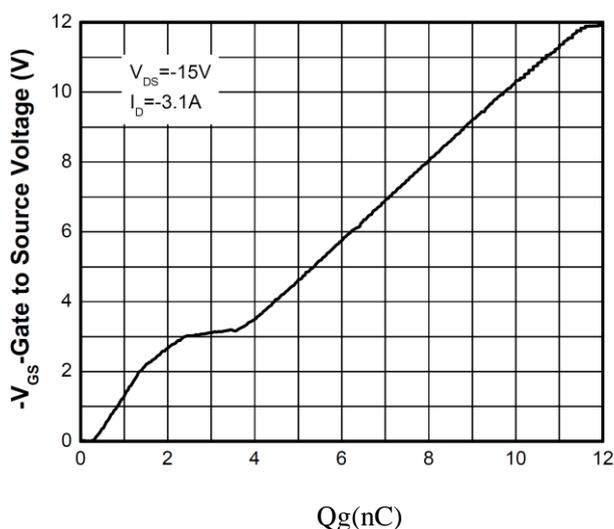


Figure 8 Gate Charge Characteristics

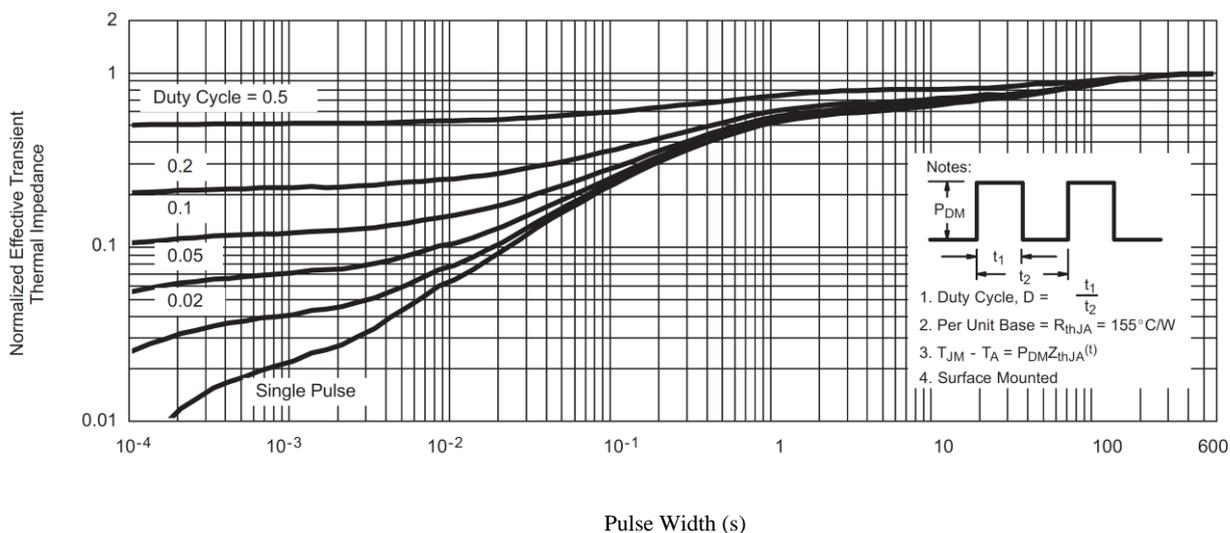
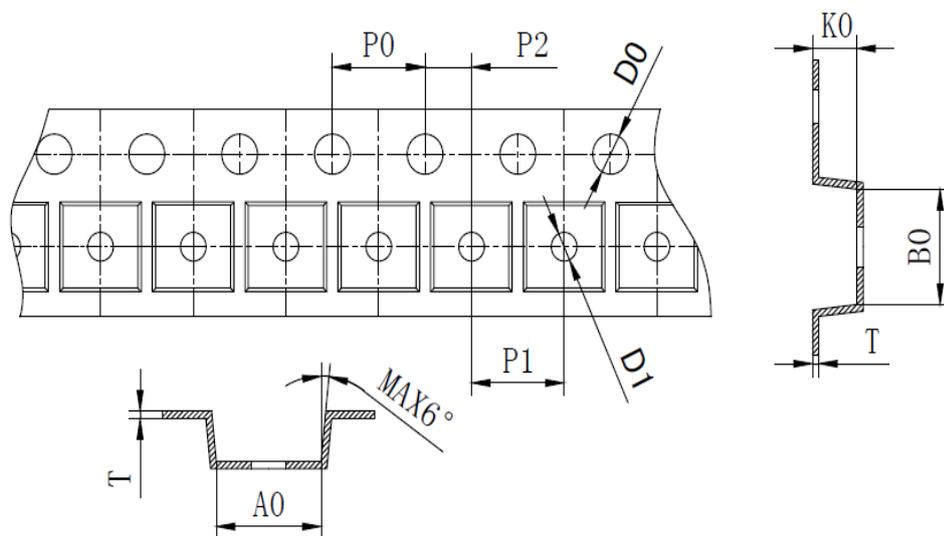


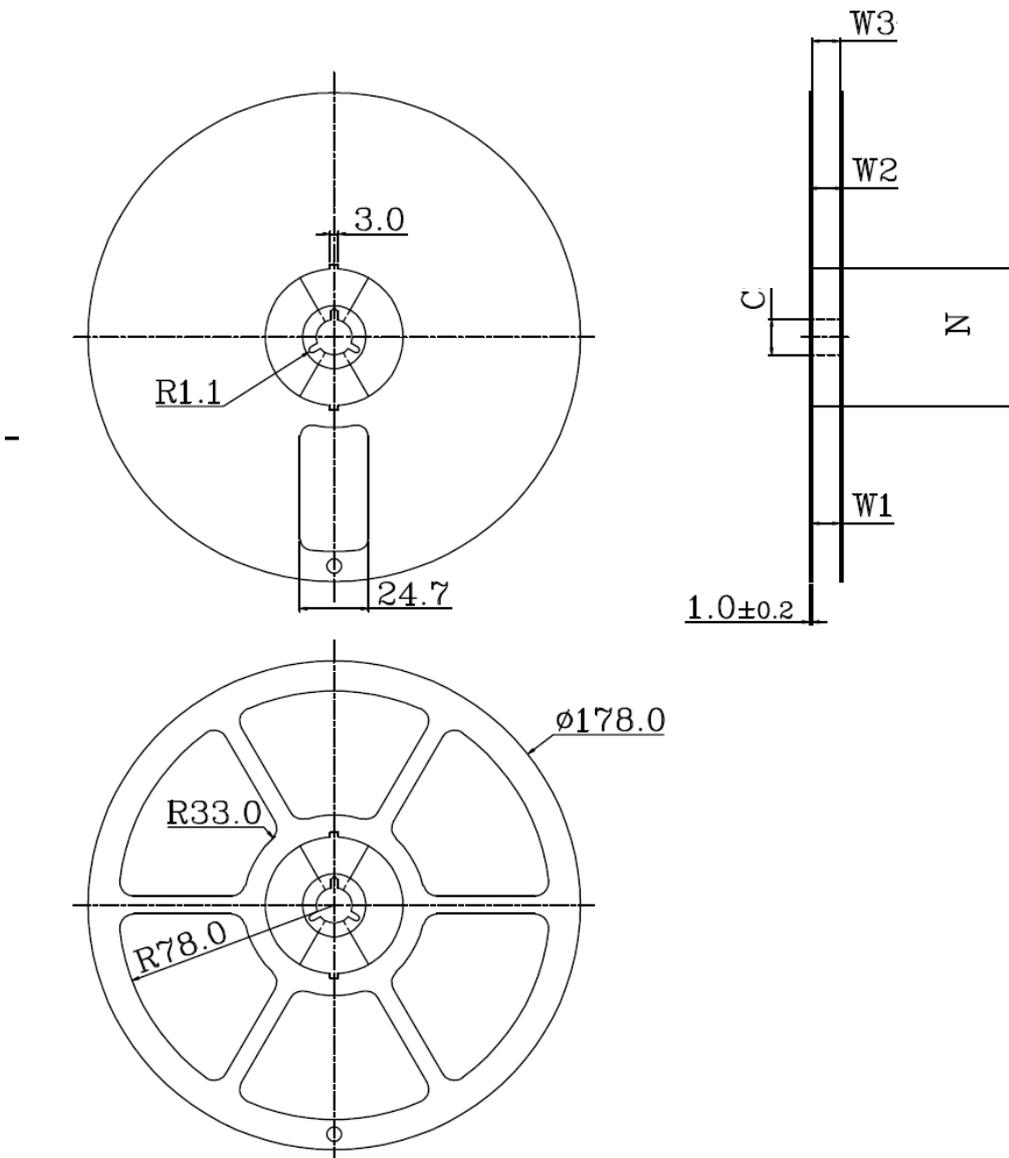
Figure 9 Maximum Transient Thermal Impedance

● Taping dimension



SYMBOL	A0	B0	K0	P0	P1	P2
SPEC	3.30±0.10	3.20±0.10	1.50±0.10	4.00±0.10	4.00±0.10	2.00±0.05
SYMBOL	T	E	F	D0	D1	W
SPEC	0.20±0.05	1.75±0.10	3.50±0.05	1.55±0.05	1.10 ^{+0.10} ₋₀	8.00 ^{+0.2} _{0.1}

Tape Size	A Max	B Min	C	D Min	N Min	W1	W2 Max	W3
8 mm	178	1.5	13.0±0.20	20.2	50	8.4 ^{+1.6} _{-0.6}	14.4	7.9Min 10.9Max
12 mm						12.4 ^{+2.0} _{-0.6}	18.4	7.9Min 10.9Max



Scale: 1:6



SSC8033GS6

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