



## SSC8035GS6B

### P-Channel Enhancement Mode MOSFET

#### ➤ Features

$V_{DS}$	$V_{GS}$	$R_{DS(ON)}$ Typ.	$I_D$
-30V	$\pm 12V$	58m $\Omega$ @-10V	-4A
		67m $\Omega$ @-4V5	
		86m $\Omega$ @-2V5	

#### ➤ Description

This device is produced with high cell density DMOS trench technology, which is especially used to minimize on-state resistance. This device particularly suits low voltage applications such as portable equipment, power management and other battery powered circuits, and low in-line power dissipation are needed in a very small outline surface mount package.

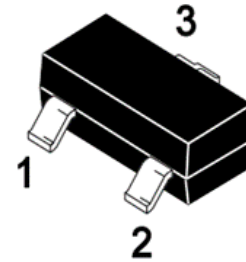
#### ➤ Applications

- TFT panel power switch
- Portable DVD, DPF
- High side DCDC converter
- High side driver for brushless DC motor

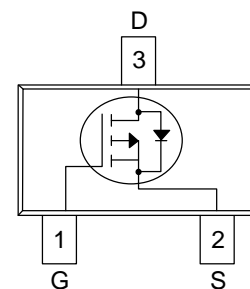
#### ➤ Ordering Information

Device	Package	Shipping
SSC8035GS6B	SOT-23	3000/Reel

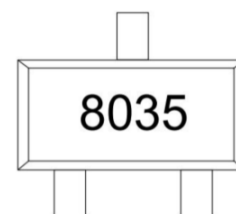
#### ➤ Pin configuration



**SOT-23**



**Pin Configuration (Top View)**



**Marking**



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

Symbol	Parameter	Ratings	Unit
$V_{\text{DSS}}$	Drain-to-Source Voltage	-30	V
$V_{\text{GSS}}$	Gate-to-Source Voltage	$\pm 12$	V
$I_{\text{D}}$	Continuous Drain Current <sup>a</sup>	-4	A
$I_{\text{DM}}$	Pulsed Drain Current <sup>b</sup>	-16	A
$P_{\text{D}}$	Power Dissipation <sup>c</sup>	1.52	W
$T_{\text{J}}$	Operation junction temperature	-55~150	$^{\circ}\text{C}$
$T_{\text{STG}}$	Storage temperature range	-55~150	$^{\circ}\text{C}$

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

Symbol	Parameter	Typical	Maximum	Unit
$R_{\theta\text{JA}}$	Junction-to-Ambient Thermal Resistance <sup>a</sup>	80	104	$^{\circ}\text{C}/\text{W}$

Note:

- The value of  $R_{\theta\text{JA}}$  is measured with the device mounted on 1 in<sup>2</sup> 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 power dissipation is based on the  $t \leq 10\text{s}$  thermal resistance rating.
- Repetitive rating, pulse width limited by junction temperature.
- The power dissipation  $P_{\text{D}}$  is based on  $T_{\text{J(MAX)}}=150^{\circ}\text{C}$ , using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heat sinking is used.

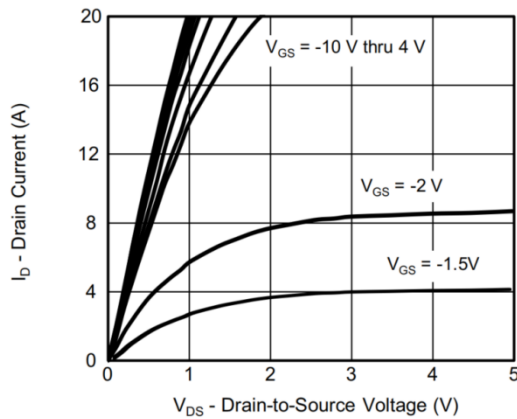


➤ **Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)**

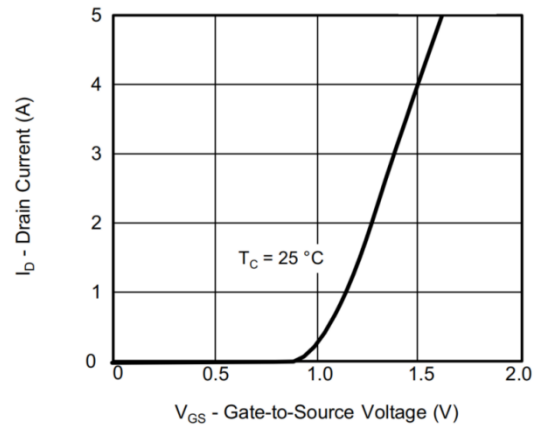
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250uA	-30			V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250uA	-0.5	-0.9	-1.5	V
Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> = -10V, I <sub>D</sub> = -4A		58	75	mΩ
		V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -2A		67	85	
		V <sub>GS</sub> = -2.5V, I <sub>D</sub> = -1A		86	120	
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = -30V, V <sub>GS</sub> = 0V			-1	uA
Gate-Source Leak Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±12V, V <sub>DS</sub> = 0V			±100	nA
Transconductance	G <sub>FS</sub>	V <sub>DS</sub> = -5V, I <sub>D</sub> = -3A		8		s
Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> = -1A		-0.8	-1.3	V
Input Capacitance	C <sub>ISS</sub>	V <sub>DS</sub> = -15V, V <sub>GS</sub> = 0V, f = 1MHz		560		pF
Output Capacitance	C <sub>OSS</sub>			62		
Reverse Transfer Capacitance	C <sub>RSS</sub>			52		
Turn-on Delay Time	T <sub>D(ON)</sub>	V <sub>GS</sub> = -10V, V <sub>DS</sub> = -15V, R <sub>L</sub> = 4Ω, R <sub>G</sub> = 3Ω		9.5		ns
Rise Time	T <sub>r</sub>			8		
Turn-off Delay Time	T <sub>D(OFF)</sub>			31		
Fall Time	T <sub>f</sub>			23		
Total Gate Charge	Q <sub>G</sub>	V <sub>GS</sub> = -10V, V <sub>DS</sub> = -15V, I <sub>D</sub> = -4A		11		nC
Gate to Source Charge	Q <sub>GS</sub>			2.4		
Gate to Drain Charge	Q <sub>GD</sub>			2.8		



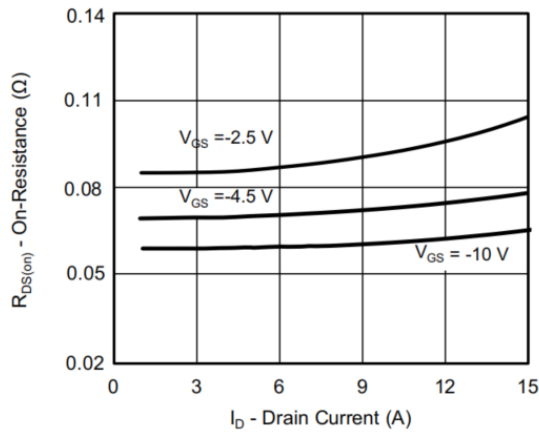
## ➤ Typical Performance Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise noted)



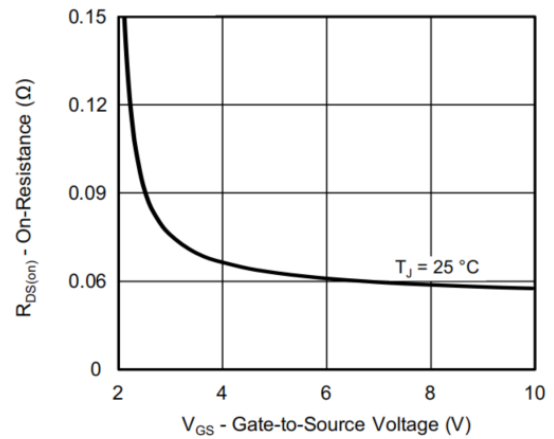
Output Characteristics



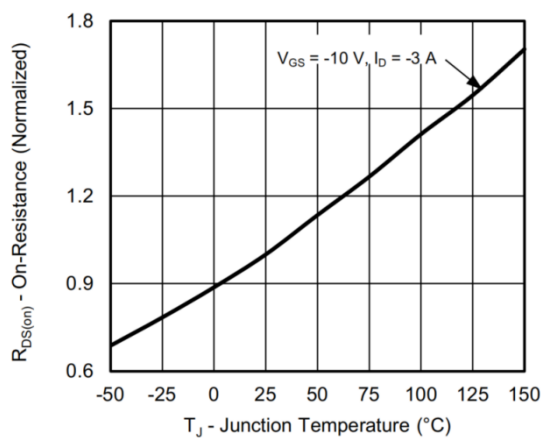
Transfer Characteristics



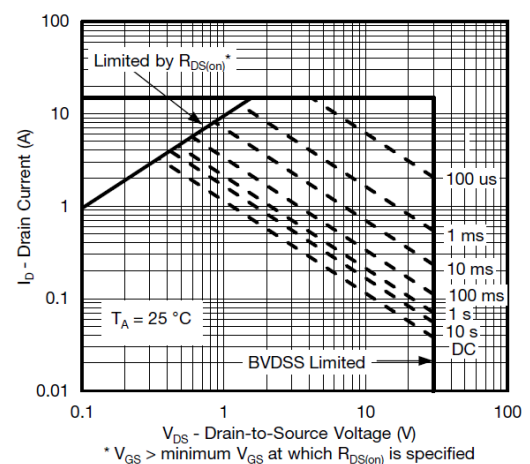
On-Resistance vs. Drain Current and Gate Voltage



On-Resistance vs. Gate-to-Source Voltage

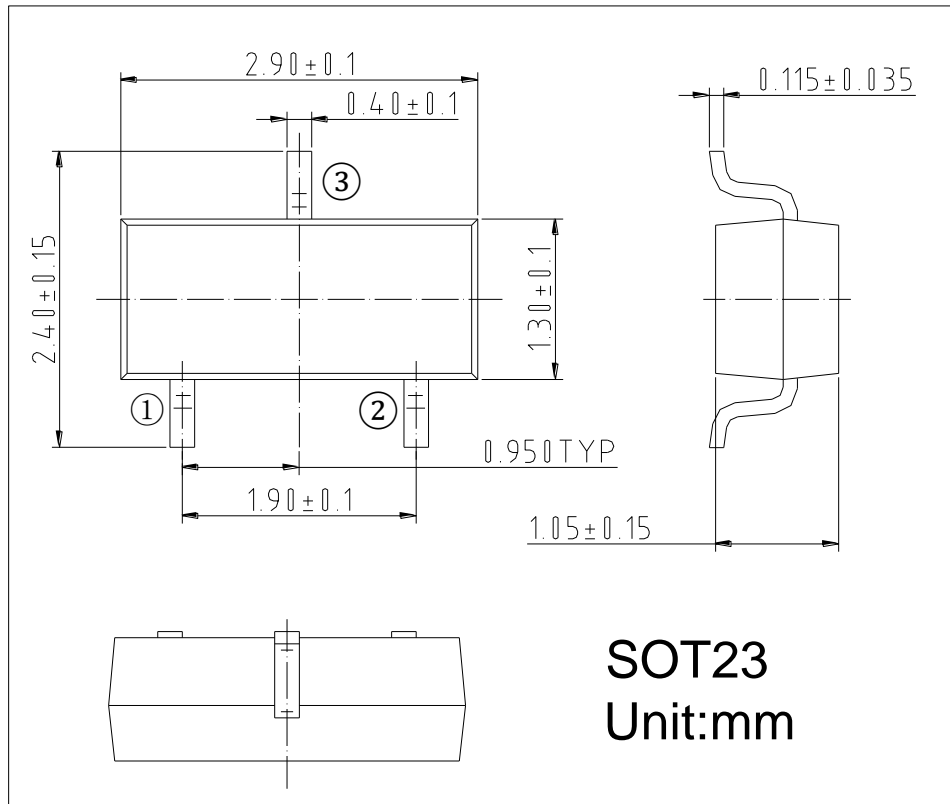


On-Resistance vs. Junction Temperature

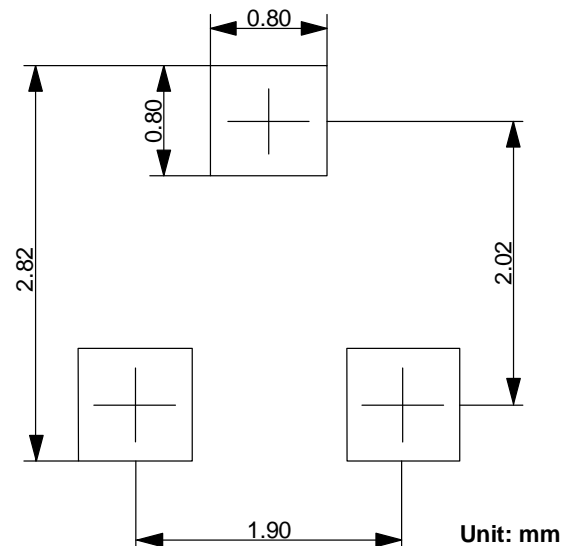


Safe Operating Area, Junction-to-Ambient

## ➤ Package Information



## ➤ Suggested Pad Layout





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