



## SSC8042GS6

### N-Channel Enhancement Mode MOSFET

#### ➤ Features

VDS	VGS	RDSON Typ.	ID
40V	±20V	30mR@10V	4.5A
		35mR@4V5	

#### ➤ Description

This device uses advanced trench technology to provide excellent RDSON and low gate charge and operation with gate voltages as low as 2.5V. This device is suitable for use as a load switch or in PWM applications.

#### ➤ Applications

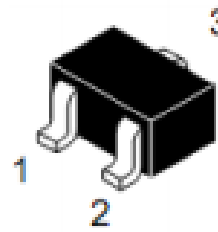
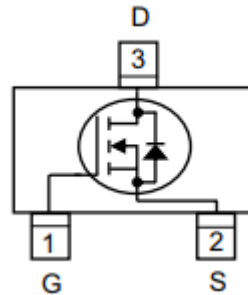
- Load Switch
- Portable Devices
- DCDC conversion

#### ➤ Ordering Information

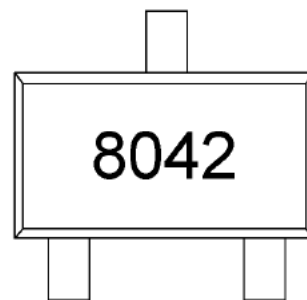
Device	Package	Shipping
SSC8042GS6	SOT23	3000/Reel

#### ➤ 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	40	V
$V_{GSS}$	Gate-to-Source Voltage	$\pm 20$	V
$I_D$	Continuous Drain Current <sup>a</sup>	4.5	A
$I_{DM}$	Pulsed Drain Current <sup>b</sup>	20	A
$P_D$	Power Dissipation <sup>c</sup>	1.3	W
$P_{DSM}$	Power Dissipation <sup>a</sup>	0.65	W
$T_J$	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 <sup>a</sup>		200	$^{\circ}\text{C}/\text{W}$
$R_{\theta JC}$	Junction-to-Case Thermal Resistance		100	

Note:

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

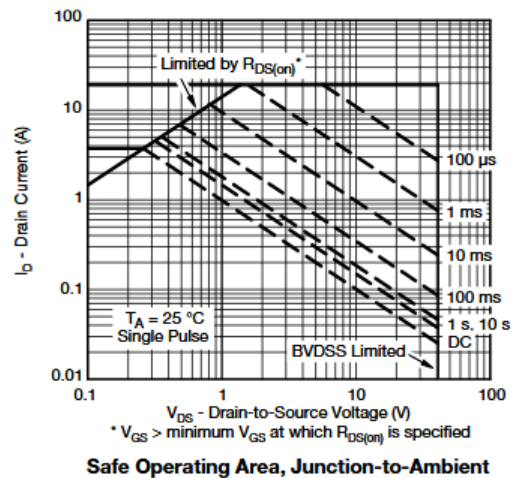
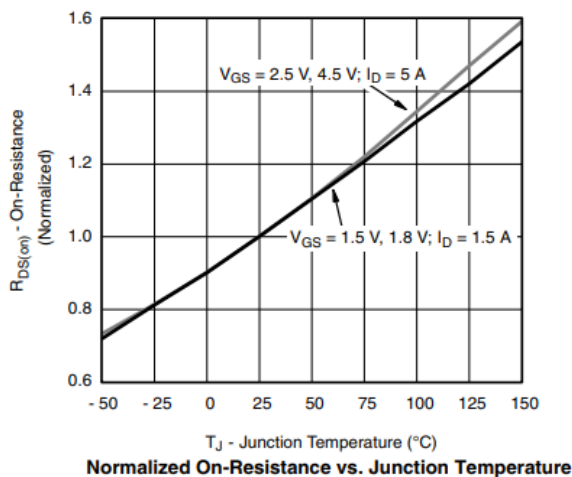
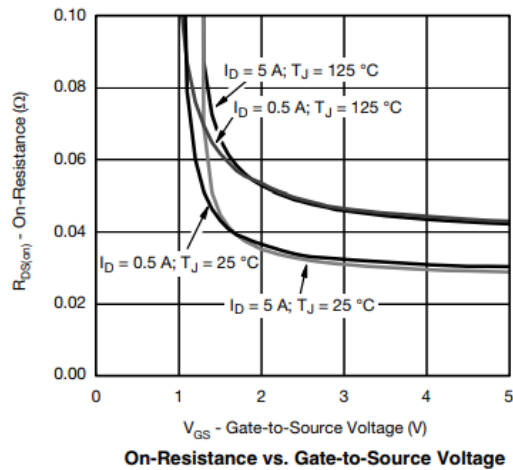
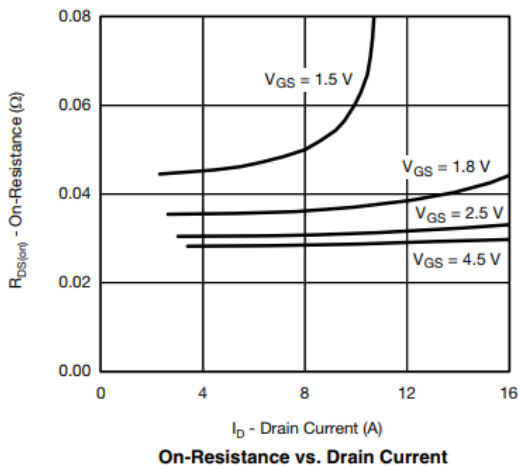
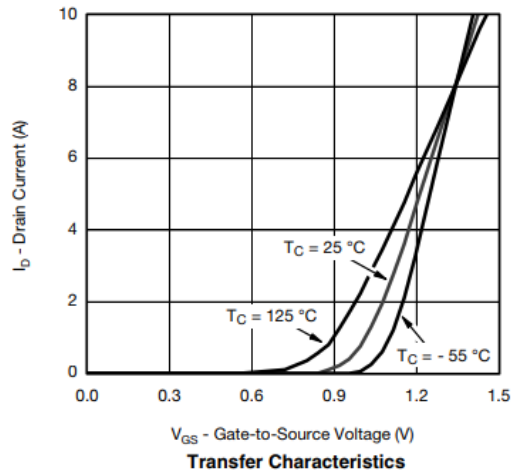
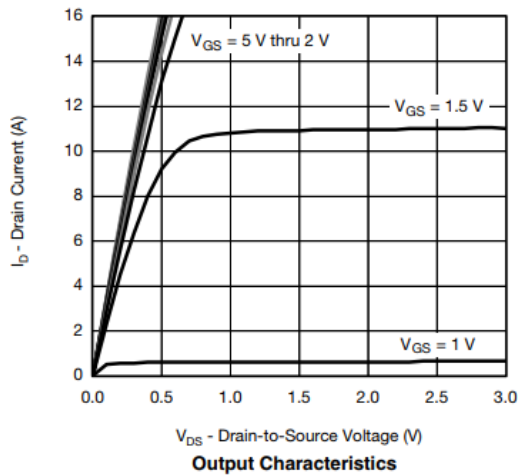


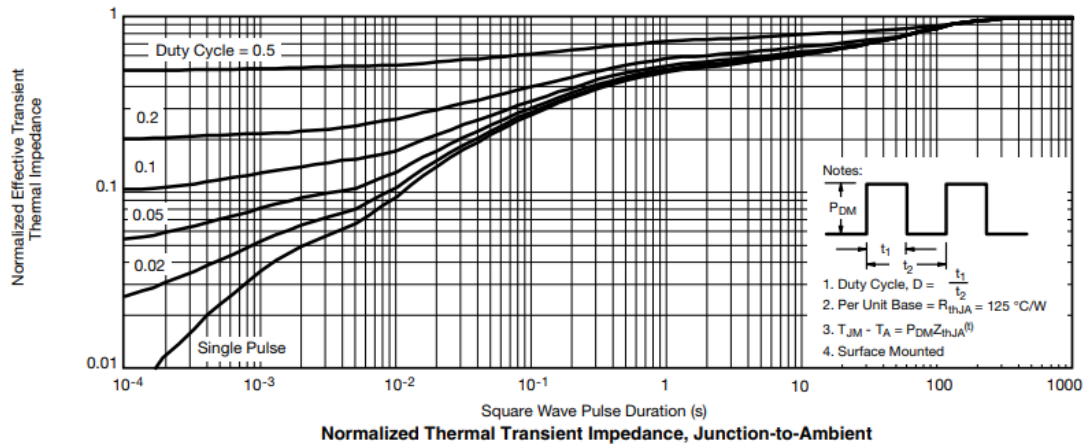
➤ **Electronics Characteristics**( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

Symbol	Parameter	Test Conditions	Min	Typ.	Max	Unit
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	40			V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1		2	V
$R_{DS(on)}$	Drain-Source On- Resistance	$V_{GS}=10V, I_D=4.5A$		30	32	mR
		$V_{GS}=4.5V, I_D=4A$		35	37	
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS}=32V, V_{GS}=0V$			1	$\mu A$
$I_{GSS}$	Gate-Source leak current	$V_{GS}=\pm 20V, V_{DS}=0V$			$\pm 100$	nA
$G_{FS}$	Transconductance	$V_{DS}=15V, I_D=4.5A$		10		S
$V_{SD}$	Forward Voltage	$V_{GS}=0V, I_S=1.7A$		0.75	1.2	V
$C_{iss}$	Input Capacitance	$V_{DS}=15V, V_{GS}=0V, f=1MHz$		450		pF
$C_{oss}$	Output Capacitance			97		
$C_{rss}$	Reverse Transfer Capacitance			75		
$T_{D(ON)}$	Turn-on delay time			12		
$T_r$	Rise Time	$V_{GS}=10V,$		50		
$T_{D(OFF)}$	Turn-off delay time	$V_{DS}=15V, R_G=3R, R_L=2.3R$		10		
$T_f$	Fall Time			8		
$Q_g$	Total Gate charge	$V_{GS}=4.5V, V_{DS}=10V, I_D=4A$		2.9		nC
$Q_{gs}$	Gate to Source charge			1.1		
$Q_{gd}$	Gate to Drain charge			0.9		



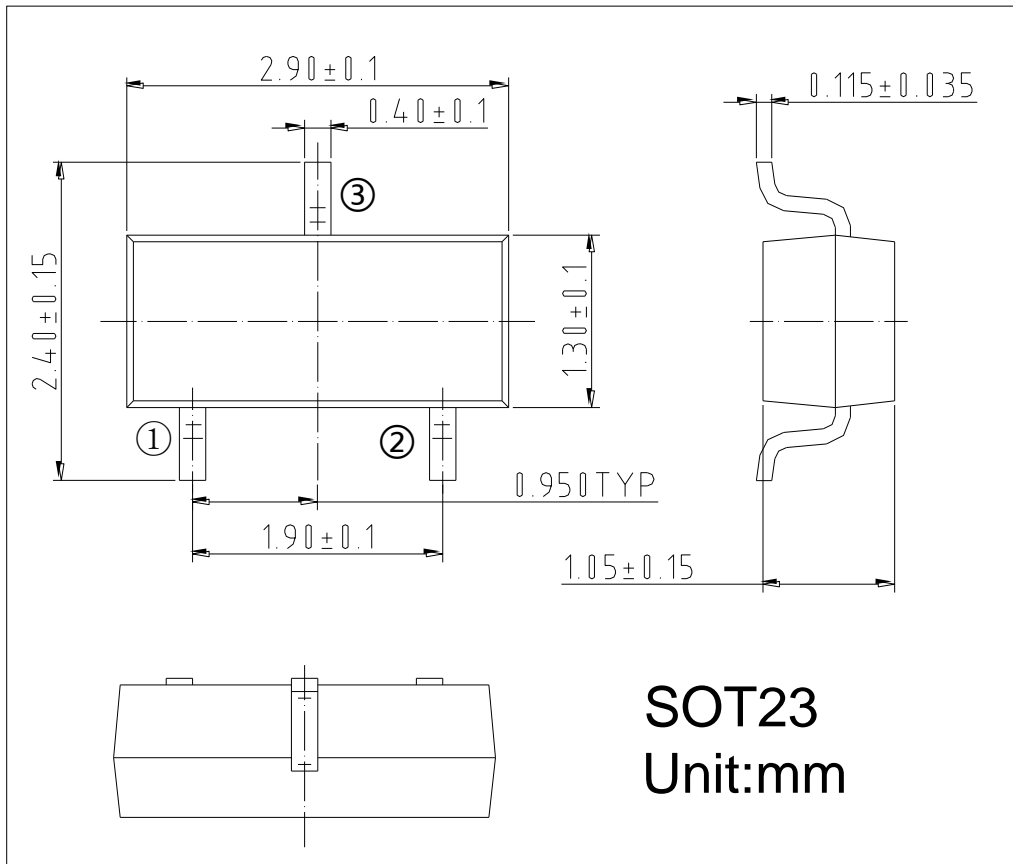
➤ **Typical Characteristics** ( $T_A=25^\circ\text{C}$  unless otherwise noted)







➤ Package Information



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