

P-Channel Enhancement Mode MOSFET

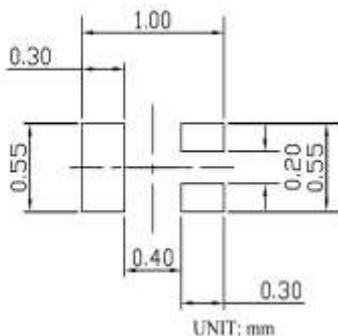
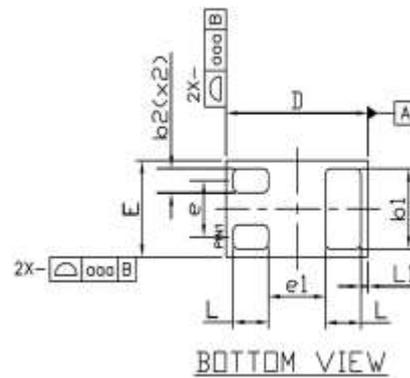
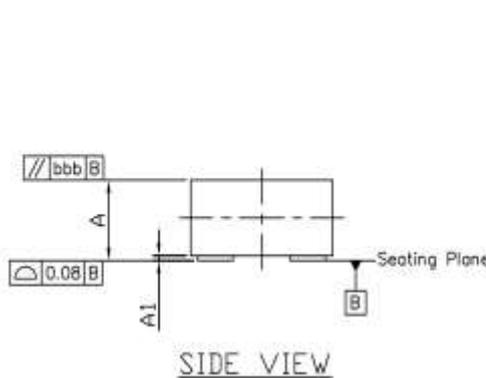
- **Features**

VDS	VGS	RDSon TYP	ID
-20V	±8V	150mR@-4V5	-1.0A
		190mR@-2V5	
		255mR@-1V8	

- **General 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. Excellent thermal and electrical capabilities.

- **Package Information**



SYMBOLS	DIMENSIONS IN MILLIMETERS		
	MIN	NOM	MAX
A	0.50	0.52	0.55
A1	0.00	0.03	0.05
b1	0.45	0.50	0.55
b2	0.30	0.35	0.20
D	0.95	1.00	1.075
E	0.55	0.60	0.675
e	---	0.35	---
e1	---	0.48	---
L	0.20	0.25	0.30
L1	---	0.05	---
aaa	---	0.15	---
bbb	---	0.05	---

DFN1006

- **Ordering Information**

Device	Package	Marking	Qty Per Reel
SSC8121GN1	DFN1006	K	10000

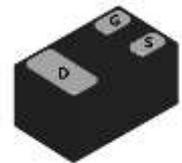
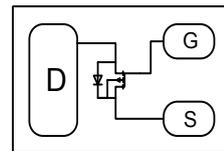
- **Applications**

- Load Switch
- Portable Devices
- DCDC conversion

- **Pin Configuration**

Top View

Bottom View



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

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DSS}	-20	V
Gate-Source Voltage	V_{GSS}	± 8	V
Continuous Drain Current ^a $V_{GS}@4.5\text{V}$ $T_A = 25^{\circ}\text{C}$	I_D	-1.0	A
Continuous Drain Current ^a $V_{GS}@4.5\text{V}$ $T_A = 70^{\circ}\text{C}$		-0.7	A
Drain Current (Pulse) ^b	I_{DM}	-5	A
Power Dissipation ^a $T_C = 25^{\circ}\text{C}$	P_D	0.9	W
Power Dissipation ^a $T_C = 70^{\circ}\text{C}$		0.5	W
Storage and Junction Temperature Range	T_J/T_{STG}	-55~150	$^{\circ}\text{C}$

● **Thermal Characteristics**

Parameter	Symbol	Typ	Max	Units	
Maximum Junction-to-Ambient ^a	$R_{\theta JA}$	$t \leq 10\text{S}$	80	101	$^{\circ}\text{C/W}$
		Steady-State	106	138	$^{\circ}\text{C/W}$
Maximum Junction-to- Ambient ^c	$R_{\theta JA}$	$t \leq 10\text{S}$	197	242	$^{\circ}\text{C/W}$
		Steady-State	275	332	$^{\circ}\text{C/W}$

● **Electrical Characteristics** @ $T_A=25^{\circ}\text{C}$ unless otherwise noted

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}$, $I_D = -250\mu\text{A}$	-20	--	--	V
Drain Cut-off Current	I_{DSS}	$V_{DS} = -20\text{V}$, $V_{GS} = 0\text{V}$	--	--	-1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS} = \pm 8\text{V}$, $V_{DS} = 0\text{V}$	--	--	± 100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(th)}$	$I_D = -250\mu\text{A}$, $V_{DS} = V_{GS}$	-0.45	-0.75	-1.5	V
Drain-Source On-state Resistance	$R_{DS(on)}$	$V_{GS} = -4.5\text{V}$, $I_D = -0.45\text{A}$	--	150	350	mR
		$V_{GS} = -2.5\text{V}$, $I_D = -0.35\text{A}$	--	190	450	mR
		$V_{GS} = -1.8\text{V}$, $I_D = -0.25\text{A}$	--	255	700	mR
Forward Transconductance	g_{FS}	$V_{DS} = -5\text{V}$, $I_D = -1.4\text{A}$	--	6.5	--	S
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{iss}	$V_{DS} = -6\text{V}$, $V_{GS} = 0\text{V}$ $f = 1\text{MHz}$	--	376	--	pF
Output Capacitance	C_{oss}		--	187	--	pF
Feedback Capacitance	C_{rss}		--	78	--	pF
SWITCHING CHARACTERISTICS						



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Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -6V, R_L = 6R, I_D = -1.0A,$	--	13	25	ns
Turn-off Delay Time	$t_{d(off)}$	$V_{GEN} = -4.5V, R_G = 6R$	--	42	70	ns
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Drain-Source Diode Forward Voltage	V_{SD}	$I_S = -1 A, V_{GS} = 0V$	-0.5	--	-1.2	V

Notes:

a: mounted on 1in 2 FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ C$.

b: Pulse Test: Pulse Width < 300 μs , Duty Cycle < 2%

c: mounted on FR-4 minimum pad board, in a still air environment with $T_A = 25^\circ C$.

● Typical Performance Characteristics

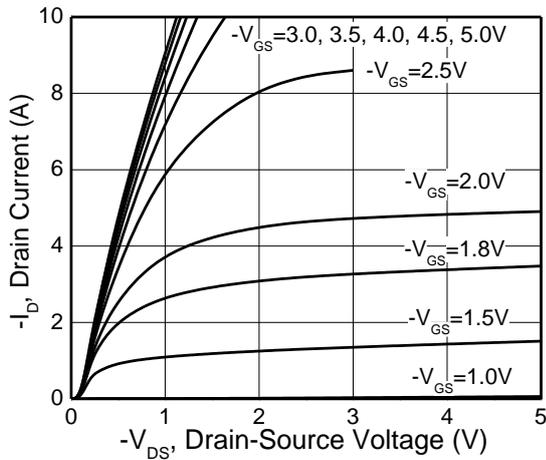


Figure 1. Output Characteristics

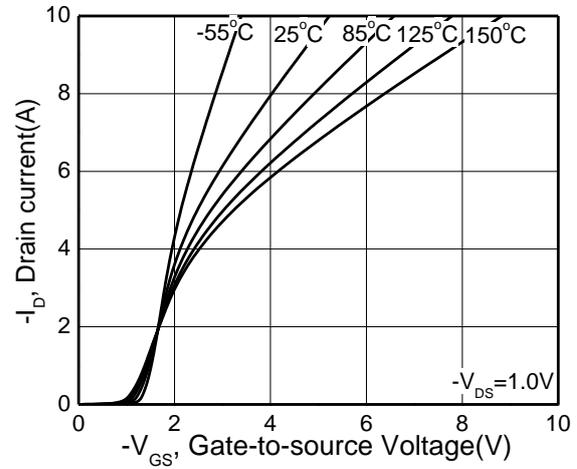


Figure 2. Transfer Characteristics

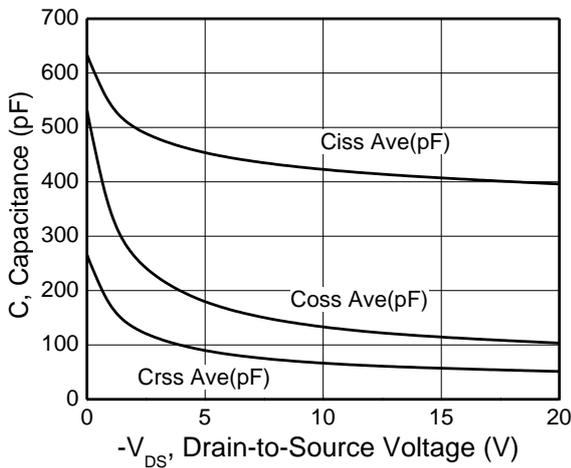


Figure 3. Capacitance

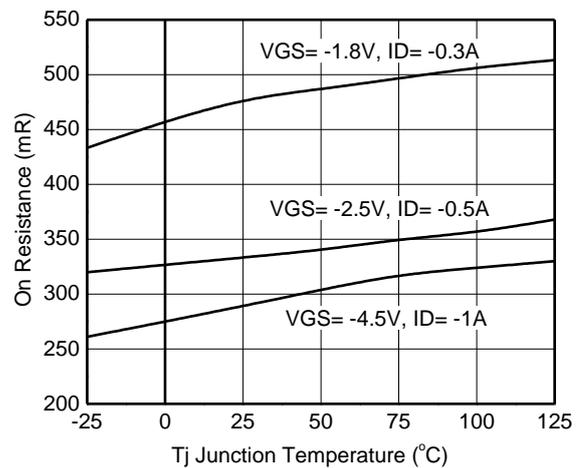


Figure 5. On-resistance vs. Temperature

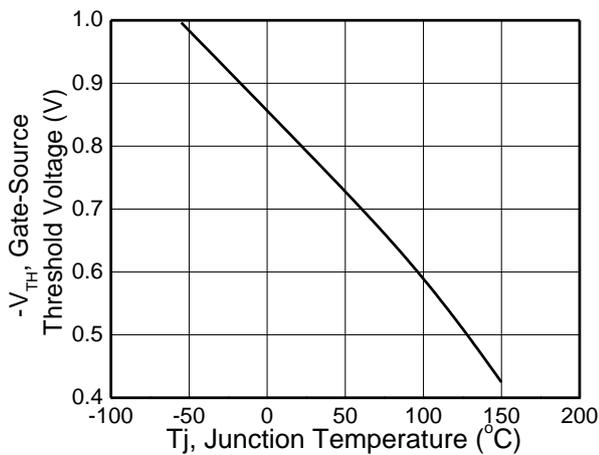


Figure 5. Gate Threshold Vs. Temperature

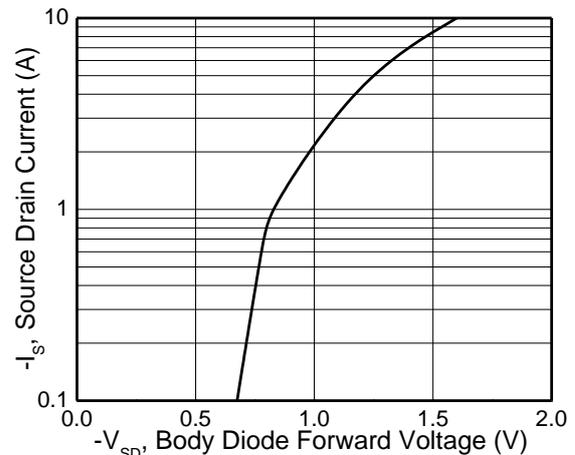


Figure 6. Body Diode Forward Voltage Vs. Source Current



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