

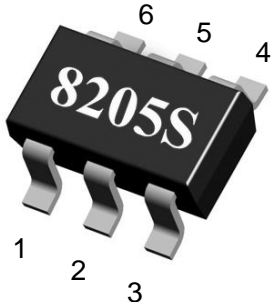
Dual N-Channel High Density Trench MOSFET (20V, 6.0A)

PRODUCT SUMMARY		
V_{DSS}	I_D	$R_{DS(on)}$ (m Ω) Max
20V	6.0A	24 @ $V_{GS} = 4.0V, I_D=6.0A$
		30 @ $V_{GS} = 2.5V, I_D=4.3A$

Features

- Advanced Trench Process Technology
- High Density Cell Design for Ultra Low On-Resistance
- Rugged and reliable
- Surface Mount package.
- Ordering information: GC8205(Lead(Pb)-free and halogen-free)

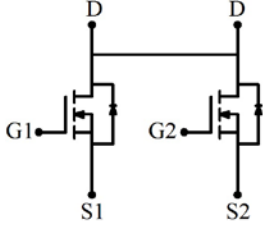




GC8205 Pin Assignment & Symbol

6-Lead Plastic **SOT-23-6L**

Pin 1: S1 Pin 2: D1/D2 Pin 3: S2
Pin 4: G2 Pin 5: D1/D2 Pin 6: G1



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

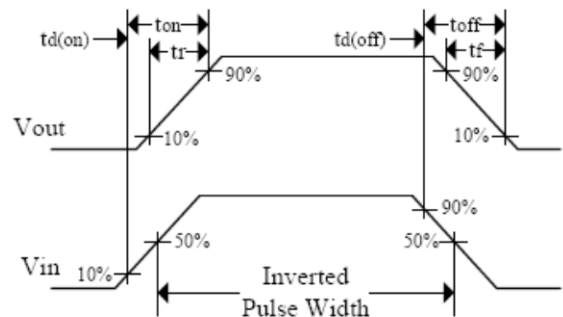
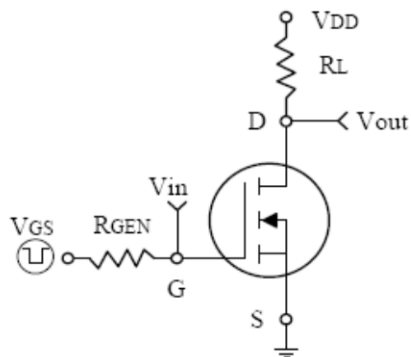
Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	± 12	V
I_D	Drain Current (Continuous)	6	A
I_{DM}	Drain Current (Pulsed) ^a	20	A
P_D	Maximum Power Dissipation @ $T_A=25^\circ\text{C}$ ^a	1.25	W
I_S	Maximum Diode Forward Current	1.7	A
T_j, T_{stg}	Operating Junction and Storage Temperature Range	-55 to +150	$^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance Junction to Ambient (PCB mounted) ^b	100	$^\circ\text{C/W}$

Note: a: Repetitive Rating: Pulse width limited by the maximum junction temperature.
b: 1-in² 2oz Cu PCB board

Electrical Characteristics (T_A=25°C, unless otherwise noted)

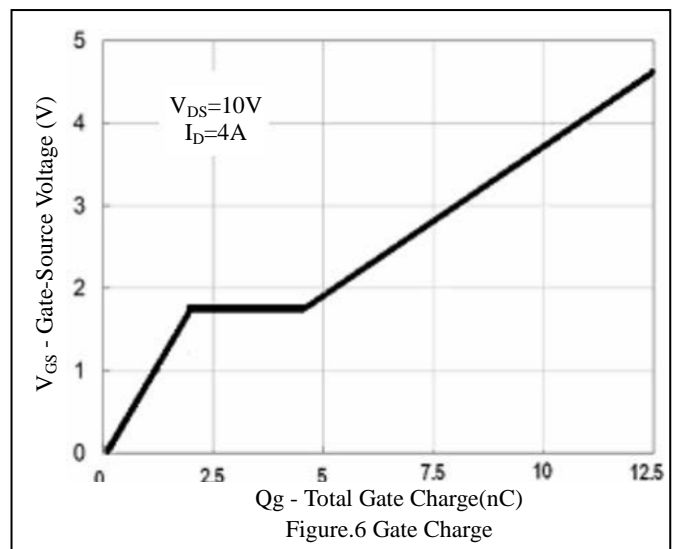
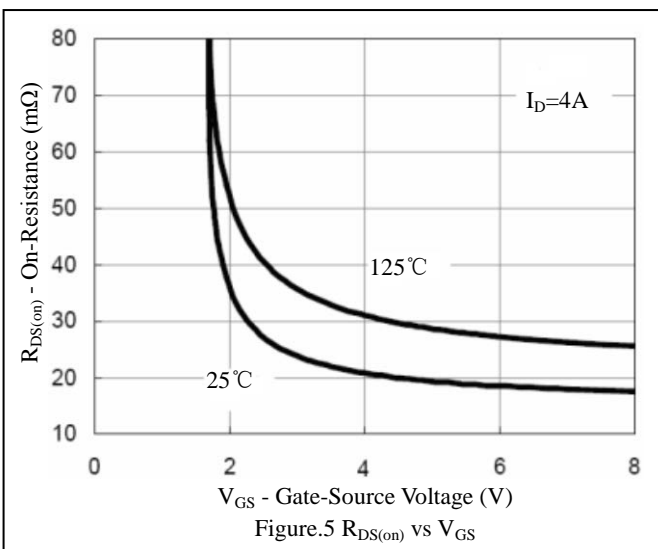
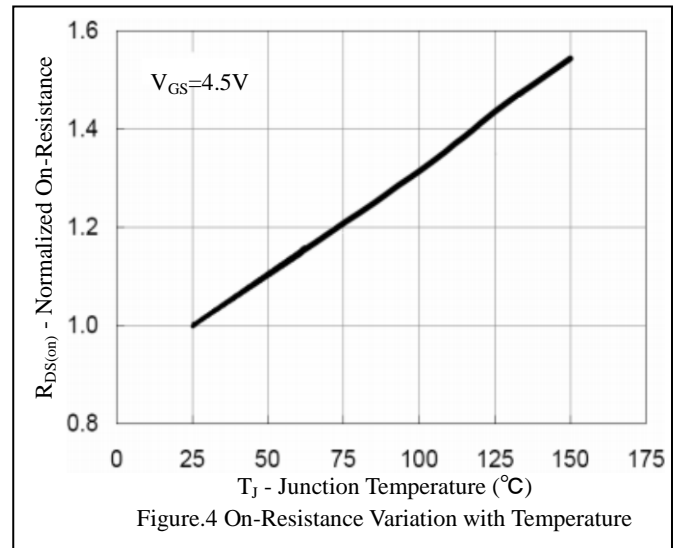
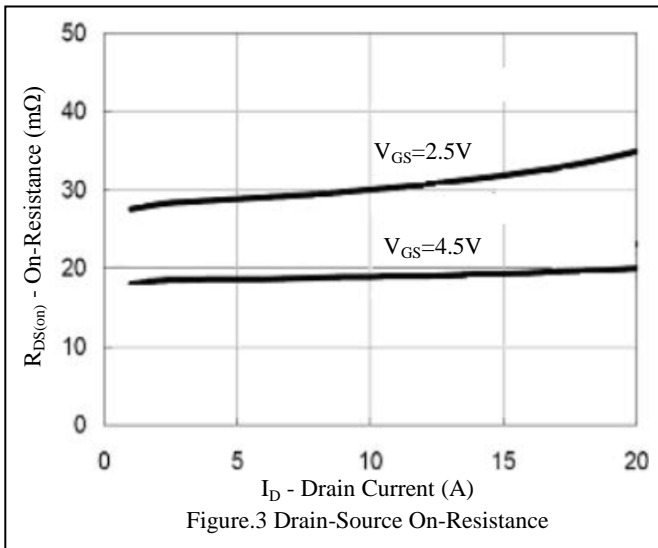
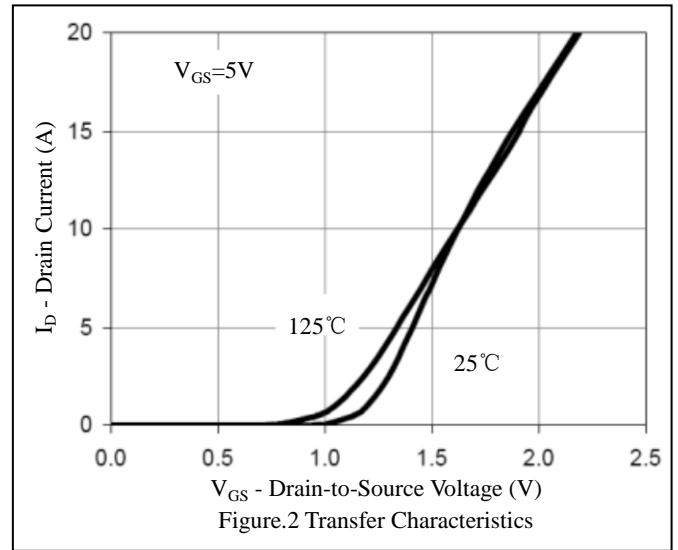
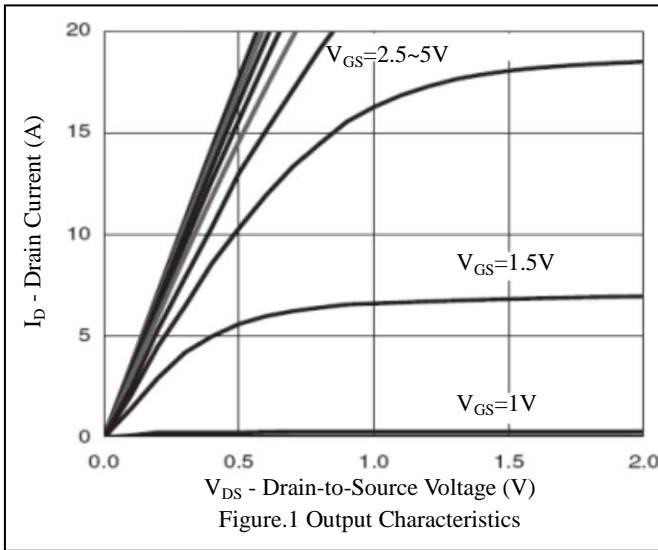
Symbol	Characteristic	Test Conditions	Min.	Typ.	Max.	Unit
• Off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	20	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =16V, V _{GS} =0V	-	-	1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±12V, V _{DS} =0V	-	-	±100	nA
• On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	0.6	-	1.2	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =4.0V, I _D =6.0A	-	21	24	mΩ
		V _{GS} =2.5V, I _D =4.3A	-	25	30	
• Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =8V, V _{GS} =0V, f=1MHz	-	560	-	PF
C _{oss}	Output Capacitance					
C _{rss}	Reverse Transfer Capacitance					
• Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =10V, I _D =3.0A, V _{GS} =4.5V	-	5	-	nC
Q _{gs}	Gate-Source Charge					
Q _{gd}	Gate-Drain Charge					
t _{d(on)}	Turn-on Delay Time	V _{DD} =10V, R _L =10Ω, I _D =1A, V _{GS} =4.5V, R _{GEN} =6Ω	-	5.9	-	nS
t _r	Turn-on Rise Time					
t _{d(off)}	Turn-off Delay Time					
t _f	Turn-off Fall Time					
• Drain-Source Diode Characteristics						
V _{SD}	Drain-Source Diode Forward Voltage	V _{GS} =0V, I _S =1.7A	-	-	1.2	V

Note: Pulse Test: Pulse Width ≤300us, Duty Cycle≤2%

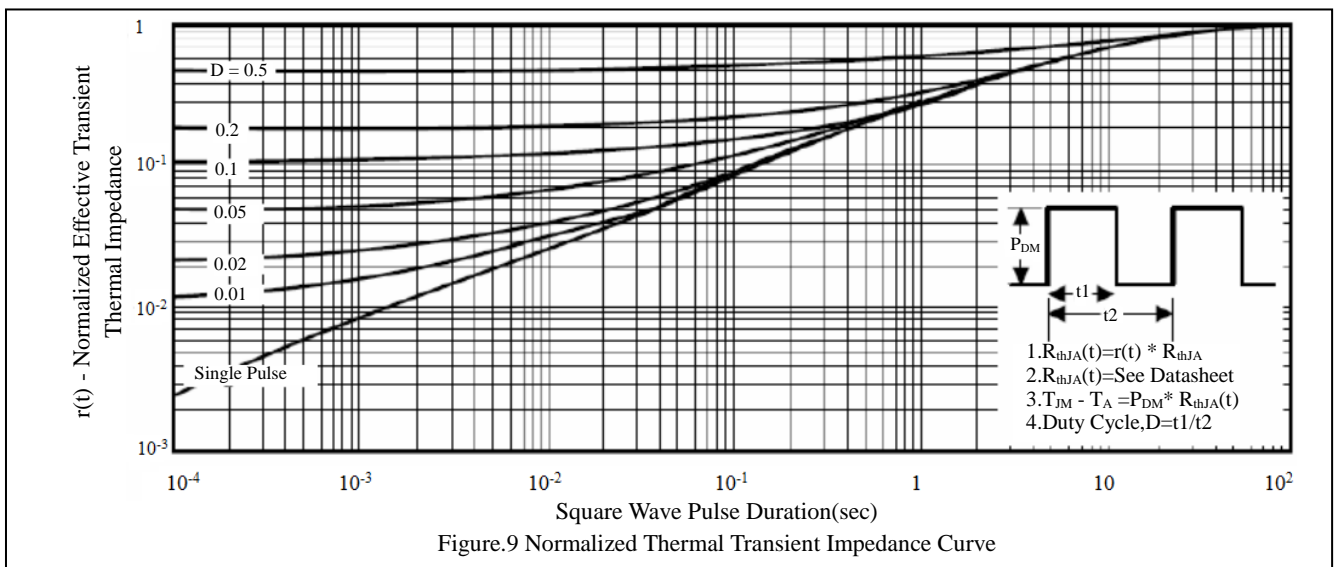
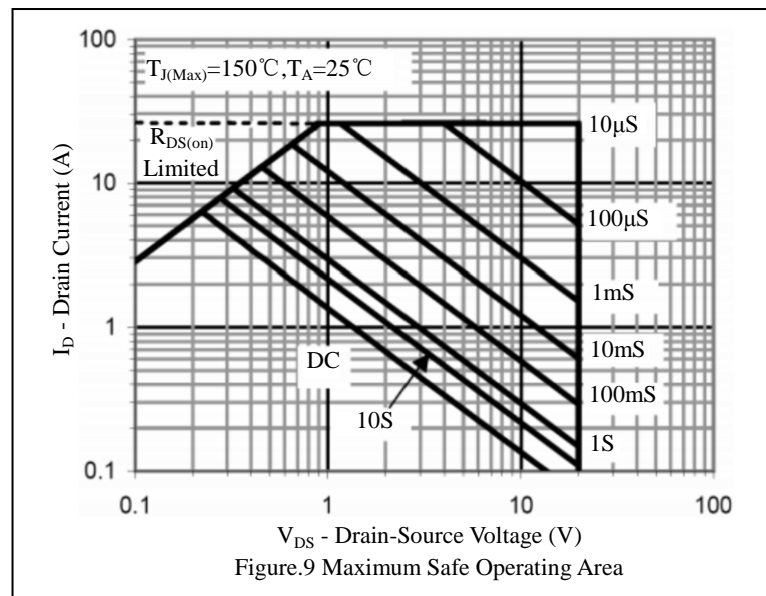
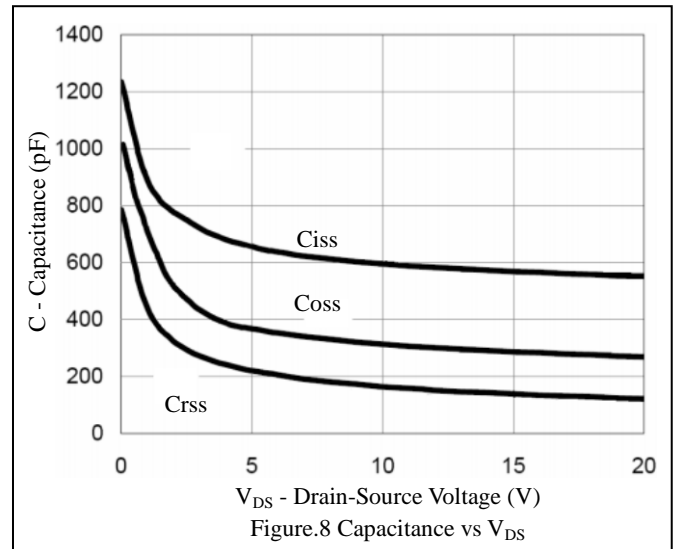
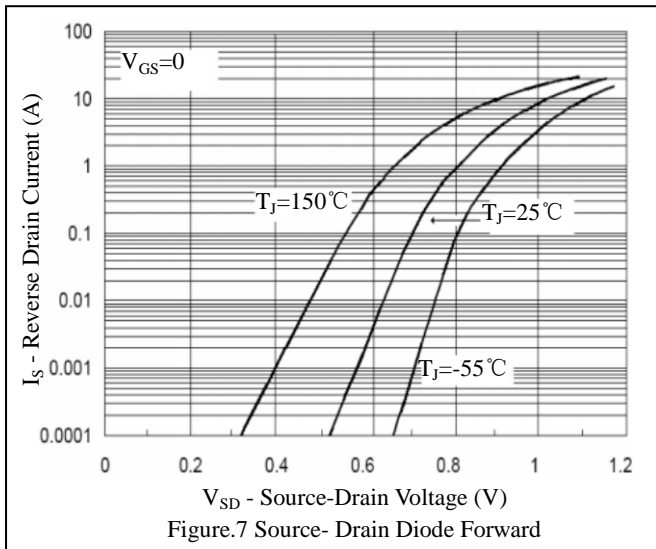


Switching Test Circuit and Switching Waveforms

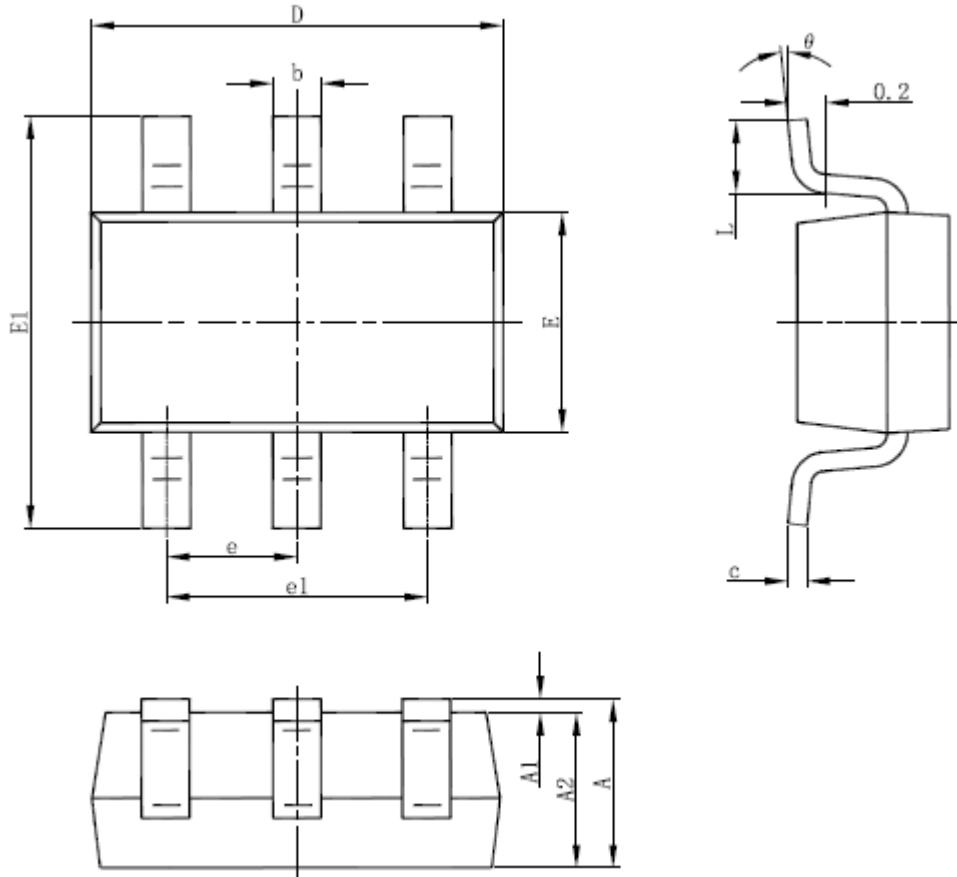
Characteristics Curve



Characteristics Curve



SOT-23-6L PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°



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2. Stresses beyond those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.