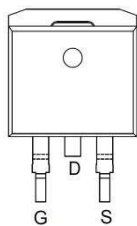
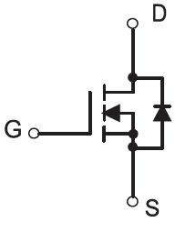


Description

100V N Channel SGT MOSFET		
Quick Reference		Feature
V_{DS}	100V	◆ Low gate Charge
I_D	200A	◆ Low Crss
$R_{DS(ON)}$ (at $V_{GS}=10V$)	<3.6mohm	◆ Low On-Resistance
		◆ Excellent FoM(figure of merit)
		◆ 100% UIS and Rg tested
		Application
		◆ Motor Driver
		◆ DC/DC Converter
		◆ Uninterruptible Power Supplies
		
TO-263-2L Top View		
		
Marking and Pin		
G10N030 = Device Code		
YYW W = Date Code		
		
Schematic Diagram		

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

Parameter		Symbol	Value	Units
Drain - Source Voltage		V_{DS}	100	V
Gate - Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_C = 25^{\circ}\text{C}$	I_D	200	A
Continuous Drain Current	$T_C = 100^{\circ}\text{C}$		140	A
Pulsed Drain Current		I_{DM}	800	A
Single Pulse Avalanche Energy		E_{AS}	797	mJ
Power Dissipation		P_D	260	W
Thermal Resistance from Junction to Case		$R_{\theta JC}$	0.48	$^{\circ}\text{C/W}$
Operating and Storage Temperature Range		T_J, T_{STG}	-55~+150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Off Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 100V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 0.1	μA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2		4	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 40A$		3.0	3.6	m Ω
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 50V, V_{GS} = 0V, f = 1MHz$		7700		pF
Output Capacitance	C_{oss}			1000		
Reverse Transfer Capacitance	C_{rss}			50		
Total gate charge	Q_g	$V_{GS} = 10V, V_{DD} = 50V, I_D = 40A$		127		nC
Gate-source charge	Q_{gs}			38		
Gate-drain charge	Q_{gd}			36		
Switching Characteristics						
Turn-on delay time	$t_{d(on)}$	$V_{GS} = 10V, V_{DD} = 50V, I_D = 40A, R_{GEN} = 3\Omega$		46		ns
Turn-on rise time	t_r			43		
Turn-off delay time	$t_{d(off)}$			106		
Turn-off fall time	t_f			75		
Drain-Source Diode Characteristics and Max Ratings						
Drain to Source Diode Forward Voltage	V_{SD}	$I_S = 40A, V_{GS} = 0V$			1.4	V
Reverse Recovery Time	t_{rr}	$I_F = 40A, dI/dt = 100A/\mu s$		60		ns
Reverse Recovery Charge	Q_{rr}			160		nC

Typical Characteristics

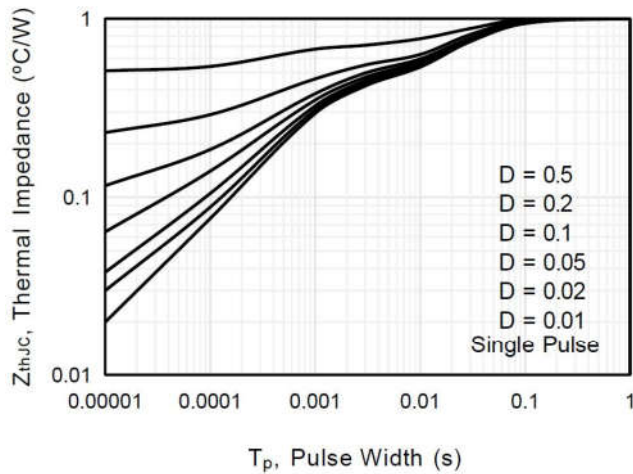


Figure 1. Transient Thermal Impedance

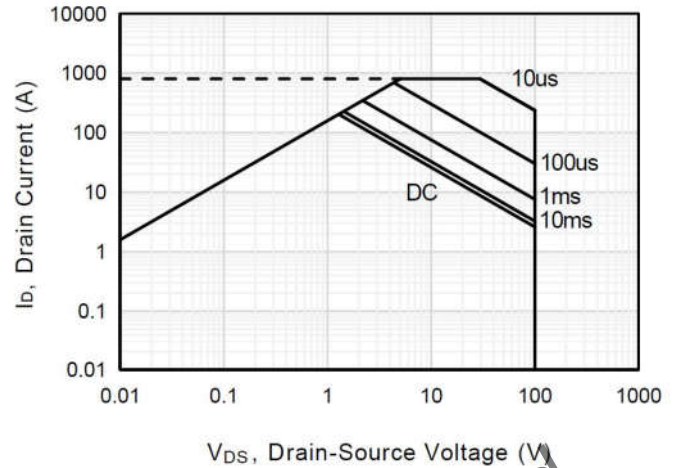


Figure 2 . Safe Operation Area

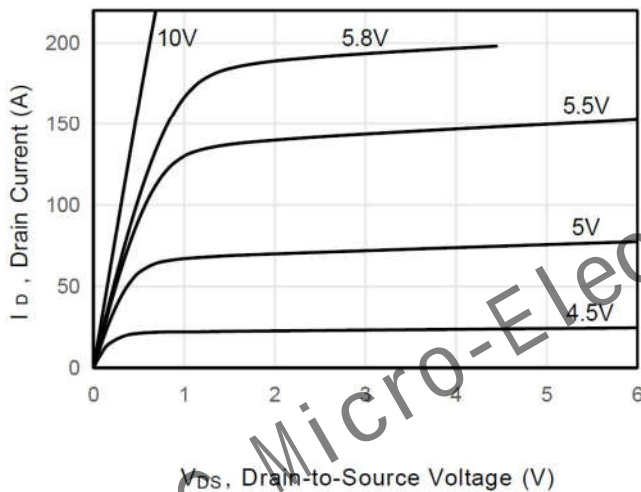


Figure 3 . Output Characteristics

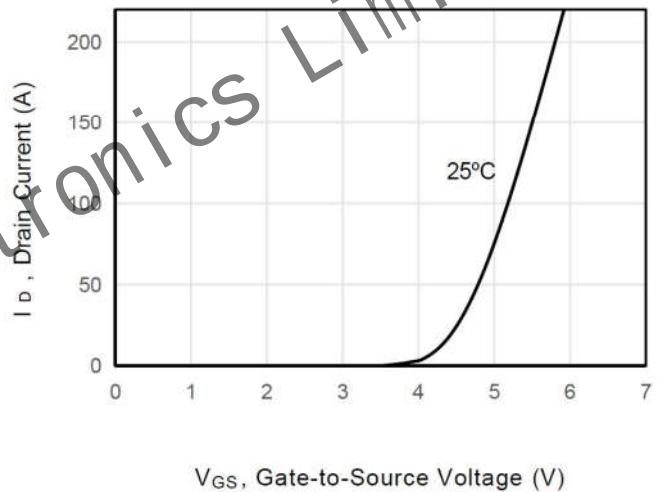


Figure 4 . Transfer Characteristics

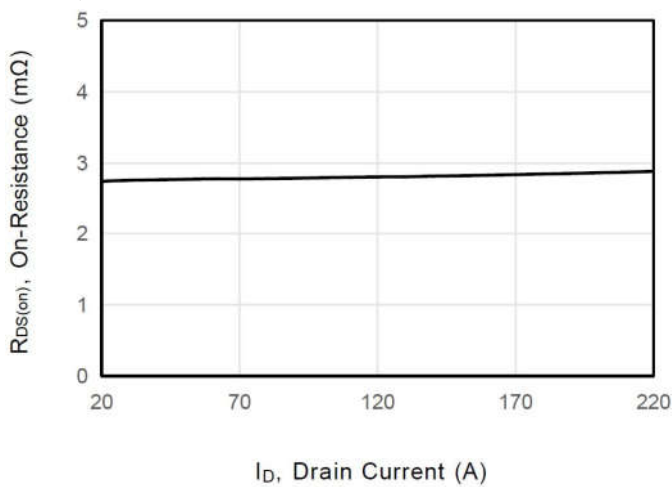


Figure 5 . On-Resistance vs Drain Current

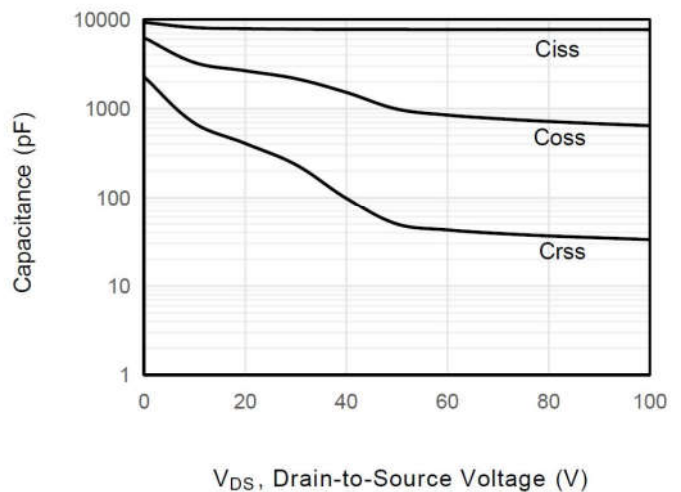
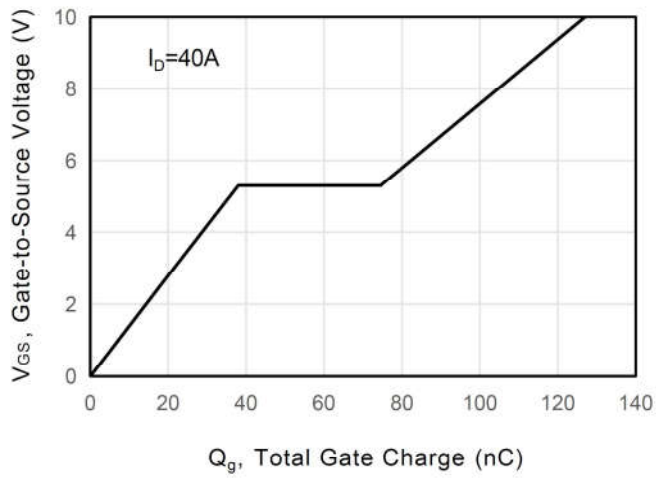
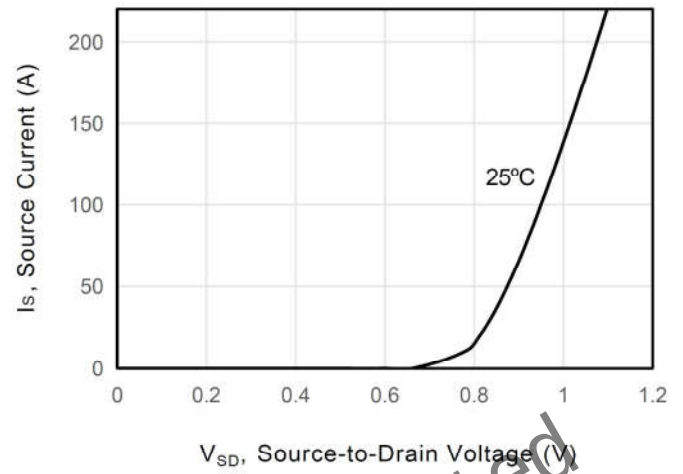
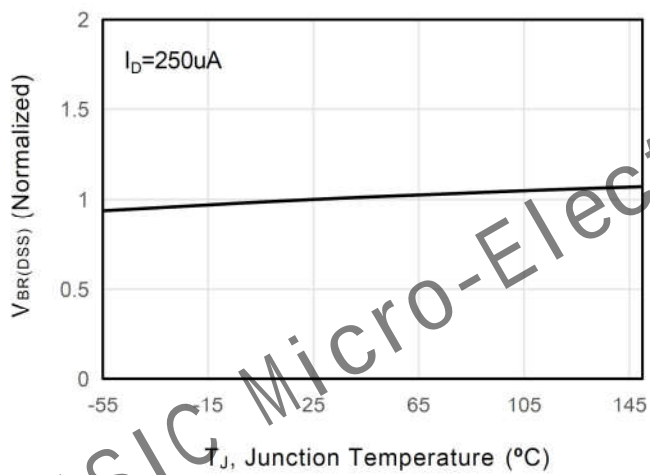
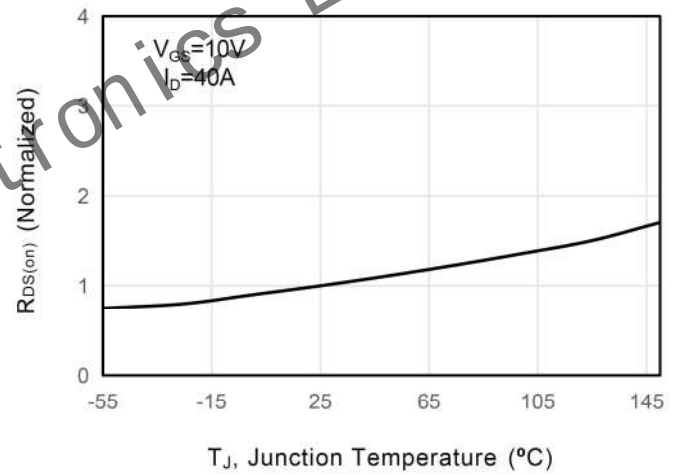
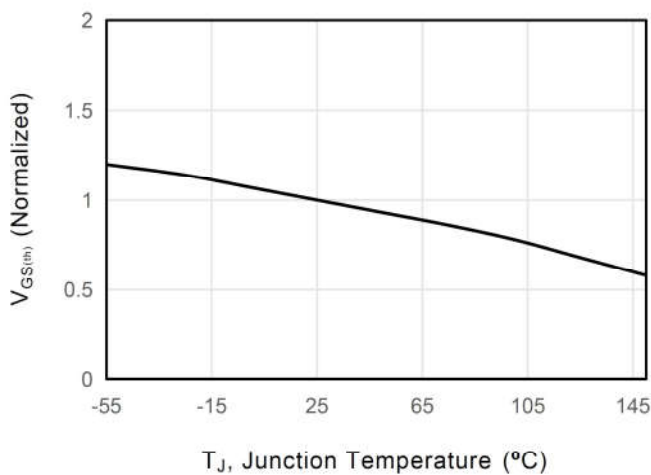
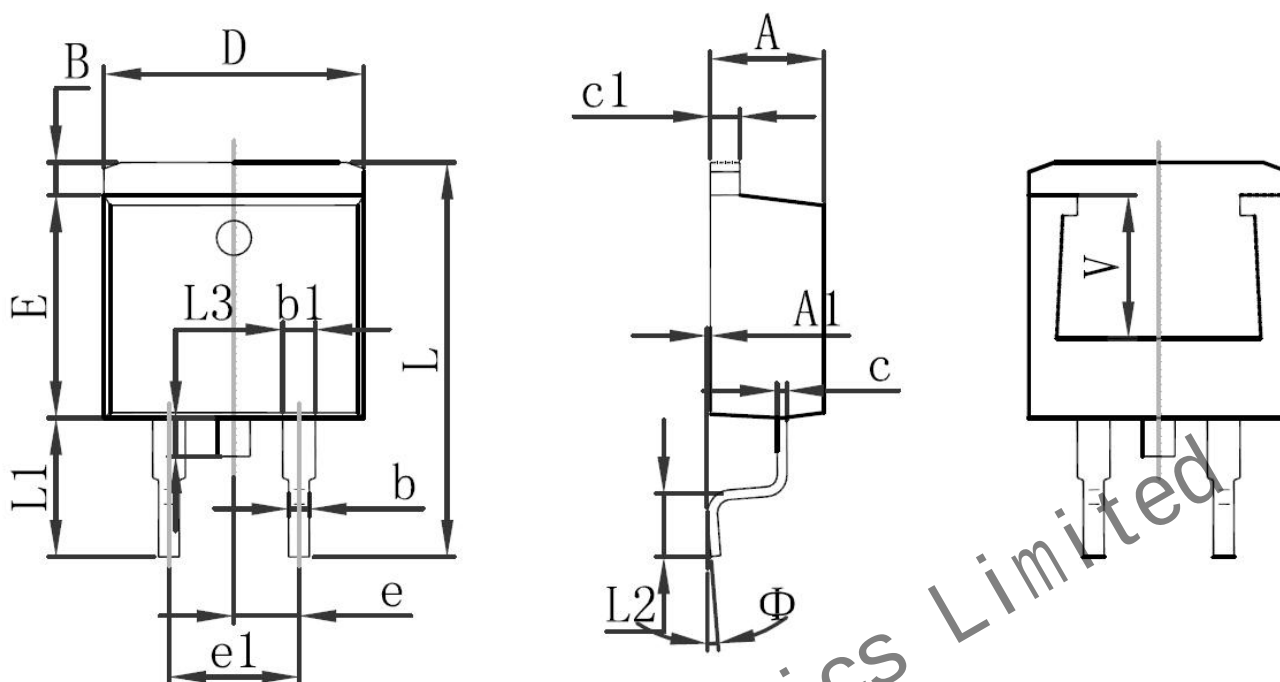


Figure 6 . Capacitance


Figure 7 . Gate Charge

Figure 8 . Body Diode Forward Voltage

Figure 9. Breakdown Voltage vs Junction Temperature

Figure 10. On-Resistance vs Temperature

Figure 11. $V_{GS(th)}$ vs Junction Temperature

TO-263-2L Package Information


Symbol	Millimeters		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°