SSC8V4N65GTF

N-Channel Enhancement Mode Power MOSFET

➢ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
650V	±30V	2.22Ω@10V	4A

➢ Description

- This device is N-Channel enhancement MOSFET.
- Fast Switching.
- Improved dv/dt Capability.

100% UIS + ΔVDS + Rg Tested!

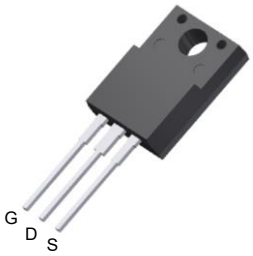
➢ Applications

- Load Switch
- PWM Application
- Power Management

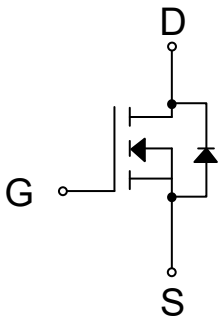
➢ Ordering Information

Device	Package	Shipping
SSC8V4N65GTF	TO-220F-3L	50/Tube

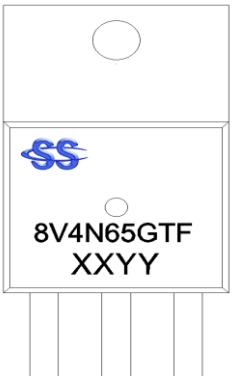
➢ Pin Configuration



TO-220F-3L (Top View)



Pin Configuration



Marking

(XXYY: Internal Traceability Code)

➢ Absolute Maximum Ratings (T_J=25℃ unless otherwise noted)

Symbol	Parameter		Ratings	Unit
V_{DSS}	Drain-to-Source Voltage		650	V
V_{GSS}	Gate-to-Source Voltage		±30	V
I_D	Continuous Drain Current	T_J=25℃	4	A
		T_J=100℃	3	
I_{DM}	Pulsed Drain Current [a]		16	A
E_{AS}	Single Pulsed Avalanche Energy		125	mJ
P_D	Power Dissipation, T_J=25℃		27	W
T_{STG} /T_J	Junction & Storage Temperature Range		-55 to 150	℃

➢ Thermal Resistance Ratings (T_J=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Unit
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient[b]	62.5	℃/W
$R_{\theta JC}$	Thermal Resistance, Junction to Case	4.7	

Note:

a. Repetitive Rating: Pulsed width limited by maximum junction temperature.

b. $R_{\theta JA}$ is measured with the device mounted on a minimum recommended pad of 2oz copper FR4 PCB.

➢ Electrical Characteristics (T_J=25℃ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250μA	650			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 650V, V_{GS} = 0V			1.0	μA
Gate-Source Leak Current	I_{GSS}	V_{GS} = ±30V, V_{DS} = 0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D = 250uA	2	3	4	V
Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 10V, I_D = 2A		2.22	2.64	Ω
Input Capacitance	C_{ISS}	V_{DS} = 25V, V_{GS} = 0V, f = 1MHz		587		pF
Output Capacitance	C_{OSS}			59		
Reverse Transfer Capacitance	C_{RSS}			10		
Total Gate Charge	Q_G	V_{GS} = 0 to 10V, V_{DS} = 520V, I_D = 4A		15		nC
Gate to Source Charge	Q_{GS}			3.5		
Gate to Drain Charge	Q_{GD}			6		
Turn-on Delay Time	$T_{D(ON)}$	V_{GS} = 10V, V_{DS} = 320V, I_D = 4A, R_G = 24Ω		13		ns
Rise Time	T_r			22		
Turn-off Delay Time	$T_{D(OFF)}$			43		
Fall Time	T_f			27		
Maximu Continuous Drain to Source Diode Forward Current	I_S				4	A
Maximum Pulsed Drain to Source Diode Forward Current	I_{SM}				16	A
Drain to Source Diode Forward Voltage	V_{SD}	VGS = 0V, IS = 4A			1.2	V
Body Diode Reverse Recovery Time	Trr	IF = 4A, di/dt = 100A/us		280		ns
Body Diode Reverse Recovery Charge	Qrr			2		μC

➢ Typical Performance Characteristics (T_J=25℃ unless otherwise noted)

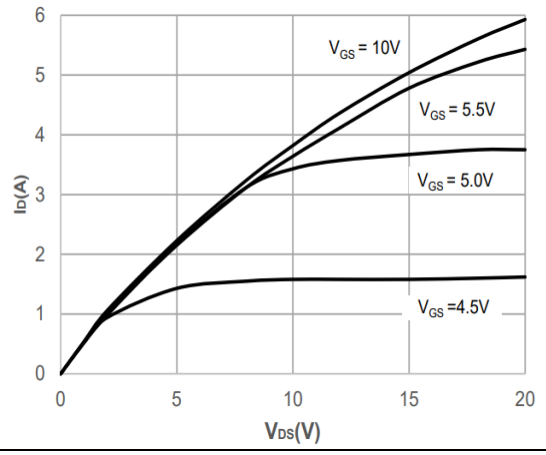


Figure 1: Output Characteristics

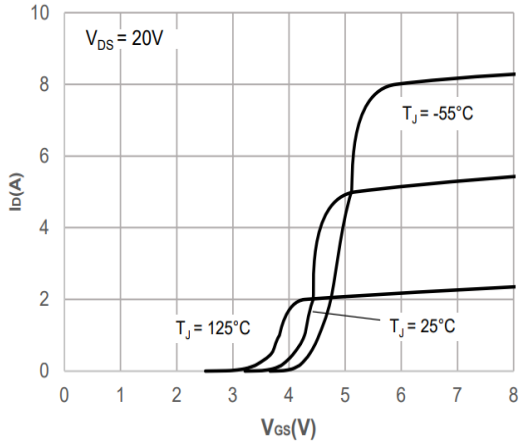


Figure 2: Typical Transfer Characteristics

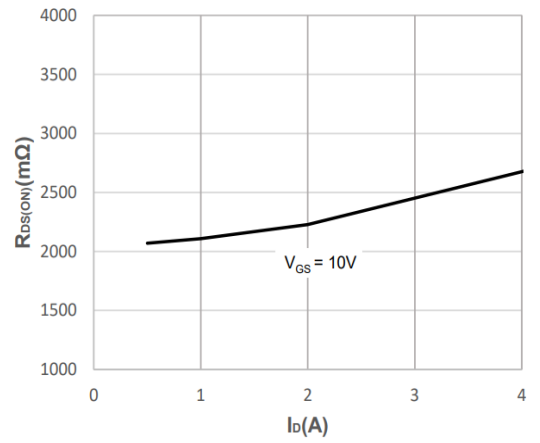


Figure 3: On-resistance vs. Drain Current

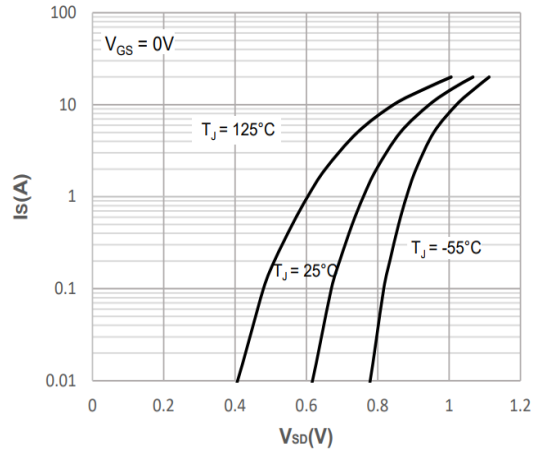


Figure 4: Body Diode Characteristics

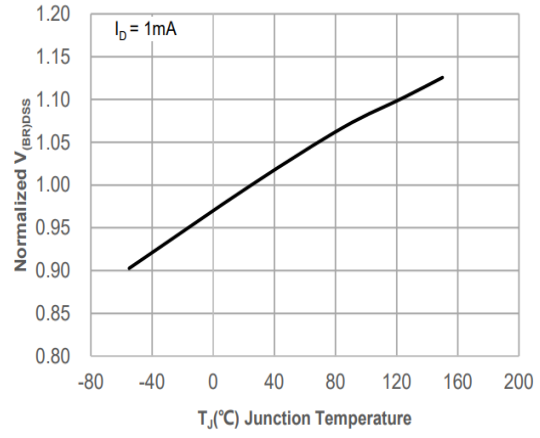


Figure 5: Normalized Breakdown voltage vs. Junction Temperature

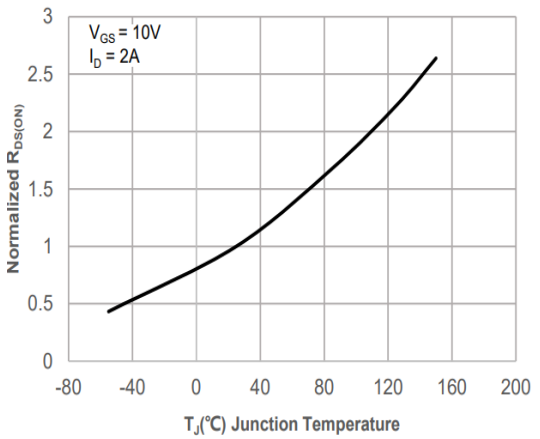


Figure 6: Normalized on Resistance vs. Junction Temperature

➢ Typical Performance Characteristics (T_J=25℃ unless otherwise noted)

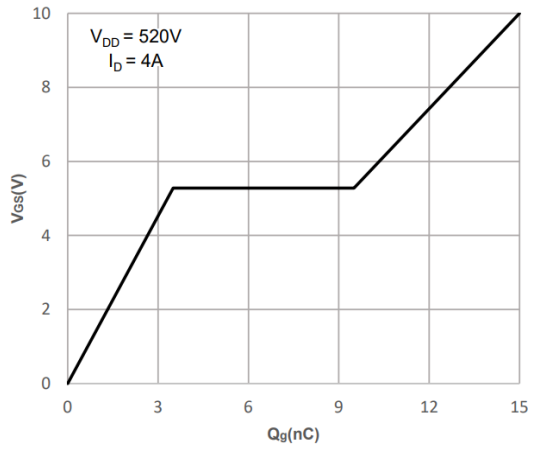


Figure 7: Gate Charge Characteristics

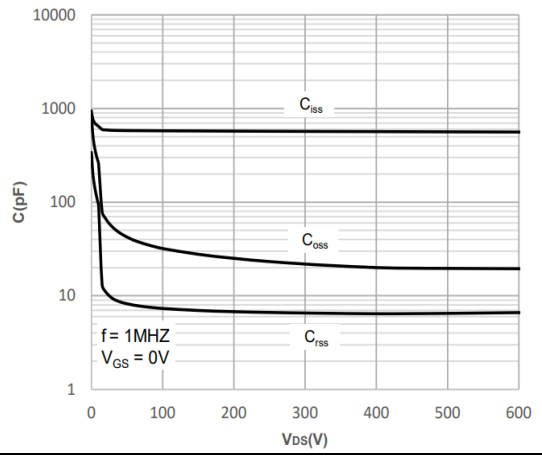


Figure 8: Capacitance Characteristics

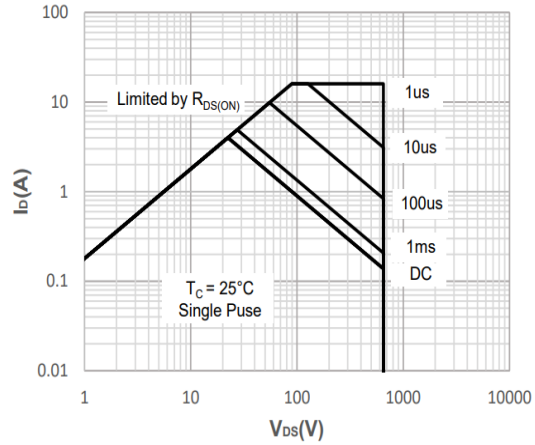


Figure 9: Maximum Safe Operating Area

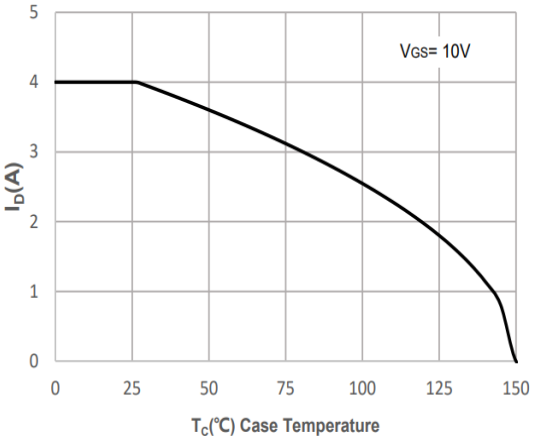


Figure 10: Maximum Continuous ID vs. Case Temperature

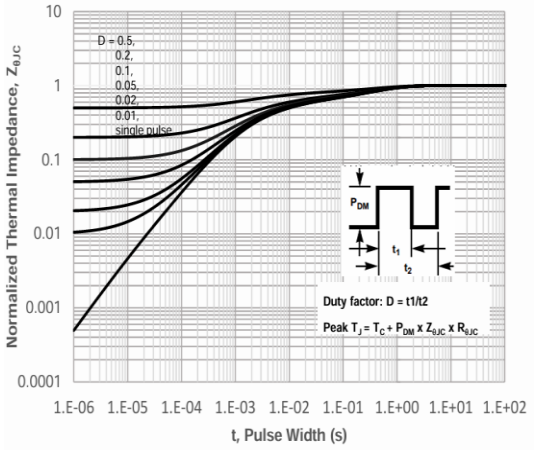


Figure 11: Normalized Maximum Transient Thermal Impedance

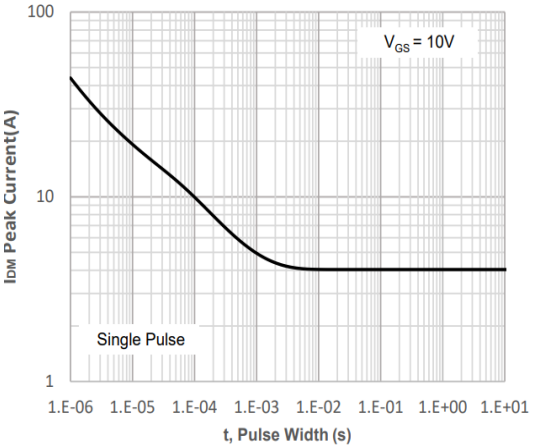
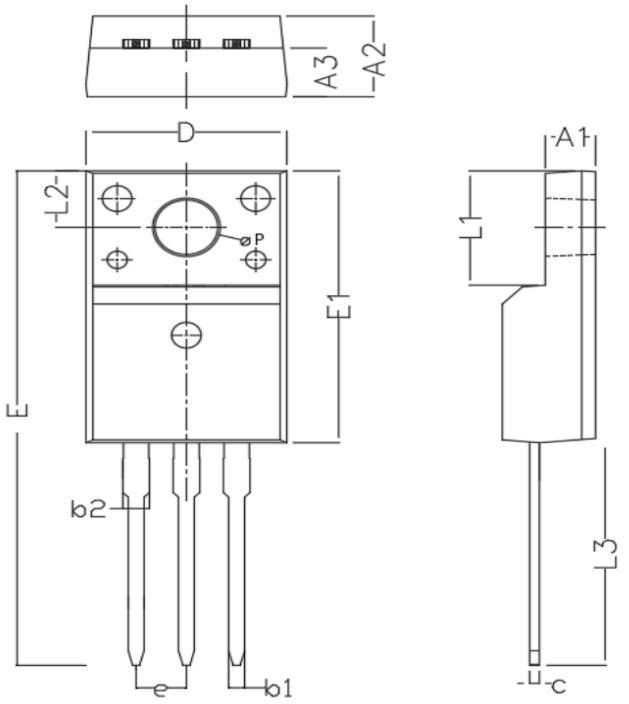


Figure 12: Peak Current Capacity

➢ Package Information

TO220F



Symbol	MILL IMETER		
	Min	Nom	Max
A1	2.34	2.54	2.74
A2	4.5	4.7	4.9
A3	2.56	2.76	2.96
b1	0.7	0.8	0.9
b2	1.23	1.3	1.47
c	0.45	0.5	0.6
D	9.96	10.16	10.36
E	28.35	28.85	29.35
E1	15.67	15.87	16.07
e	2.54REF		
L1	6.48	6.68	6.88
L2	3.2	3.3	3.4
L3	12.68	12.98	13.28
øP	3.03	3.4	3.5

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