



SSCV10N65GT4

N-Channel Enhancement Mode Power MOSFET

➤ Features

V_{DS}	V_{GS}	$R_{DS(ON)}$ Typ.	I_D
650V	$\pm 30V$	$0.84\Omega@10V$	10A

➤ Description

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

100% UIS + ΔV_{DS} + R_g Tested!

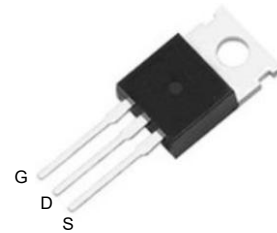
➤ Applications

- Load Switch
- PWM Application
- Power Management

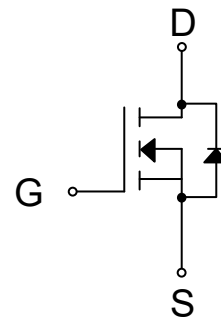
➤ Ordering Information

Device	Package	Shipping
SSCV10N65GT4	TO220-3L	50/Tube

➤ Pin Configuration



TO220-3L (Top View)



Pin Configuration



Marking

(XXYY: Internal Traceability Code)



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

Symbol	Parameter	Ratings	Unit
V_{DS}	Drain-to-Source Voltage	650	V
V_{GS}	Gate-to-Source Voltage	± 30	V
I_D	Continuous Drain Current	$T_J=25^{\circ}\text{C}$	A
		$T_J=100^{\circ}\text{C}$	
I_{DM}	Pulsed Drain Current ^a	40	A
E_{AS}	Single Pulsed Avalanche Energy	405	mJ
P_D	Power Dissipation, $T_J=25^{\circ}\text{C}$	125	W
T_{STG} / T_J	Junction & Storage Temperature Range	-55 to 150	$^{\circ}\text{C}$

➤ **Thermal Resistance Ratings ($T_J=25^{\circ}\text{C}$ unless otherwise noted)**

Symbol	Parameter	Ratings	Unit
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient ^b	62	$^{\circ}\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	1	

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.



SSCV10N65GT4

➤ Electrical Characteristics (T_J=25°C 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 = 250μA	2	3	4	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 5A		0.84	1.09	Ω
Input Capacitance	C _{ISS}	V _{DS} = 25V, V _{GS} = 0V, f = 1MHz		1560		pF
Output Capacitance	C _{OSS}			136		
Reverse Transfer Capacitance	C _{RSS}			19		
Total Gate Charge	Q _G	V _{GS} = 0 to 10V, V _{DS} = 520V, I _D = 10A		37		nC
Gate to Source Charge	Q _{GS}			8		
Gate to Drain Charge	Q _{GD}			15		
Turn-on Delay Time	T _{D(ON)}	V _{GS} = 10V, V _{DS} = 310V, I _D = 10A, R _G = 24Ω		23		ns
Rise Time	T _r			37		
Turn-off Delay Time	T _{D(OFF)}			104		
Fall Time	T _f			45		
Maximum Continuous Drain to Source Diode Forward Current	I _S				10	A
Maximum Pulsed Drain to Source Diode Forward Current	I _{SM}				40	A
Drain to Source Diode Forward Voltage	V _{SD}	V _{GS} = 0V, I _S = 10A			1.2	V
Body Diode Reverse Recovery Time	T _{rr}	I _F = 10A, di/dt = 100A/us		423		ns
Body Diode Reverse Recovery Charge	Q _{rr}			4.4		μC



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

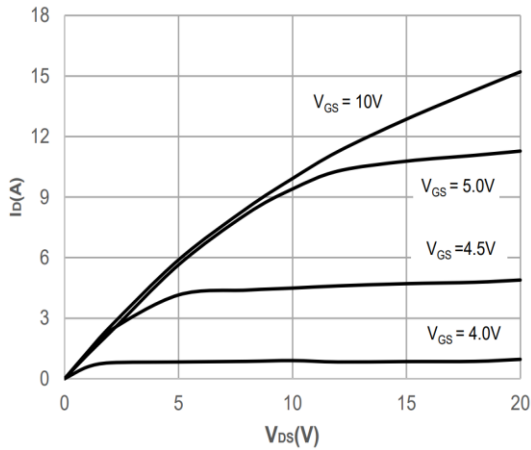


Figure 1: Output Characteristics

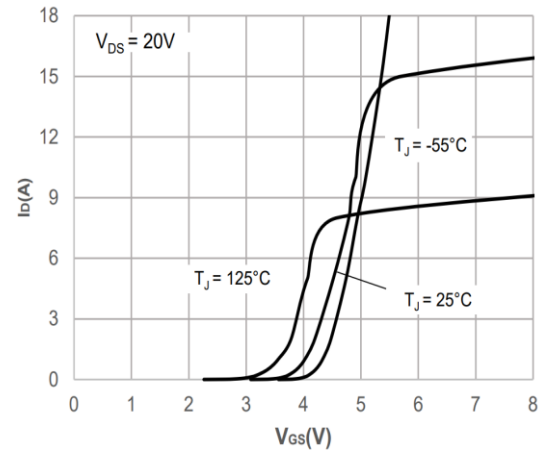


Figure 2: Typical Transfer Characteristics

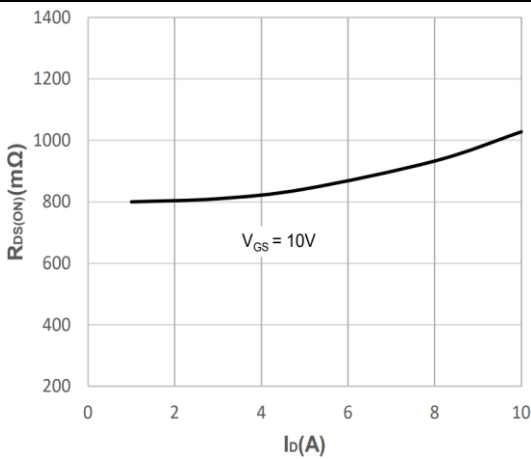


Figure 3: On-resistance vs. Drain Current

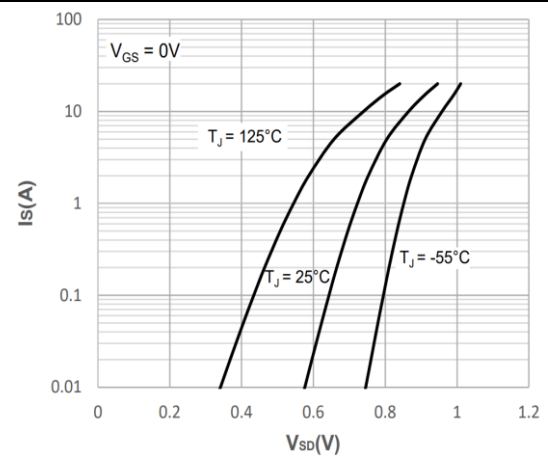


Figure 4: Body Diode Characteristics

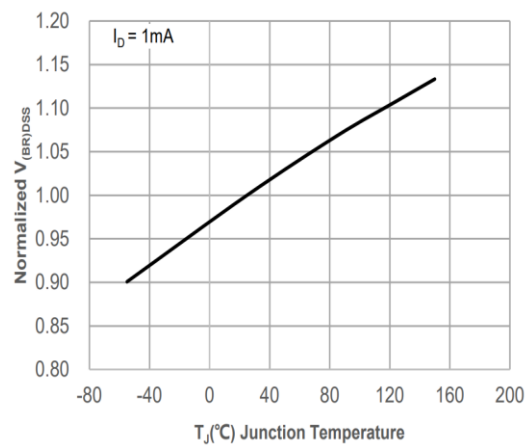


Figure 5: Normalized Breakdown voltage vs. Junction Temperature

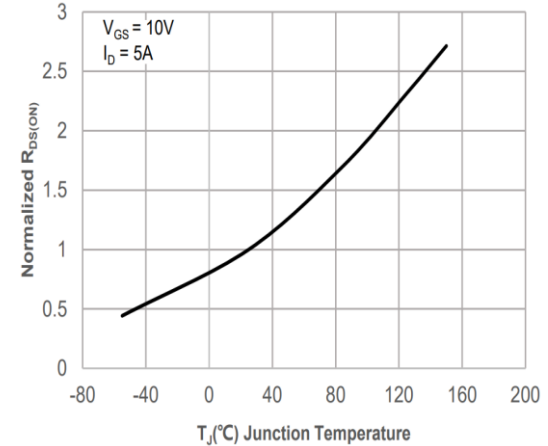
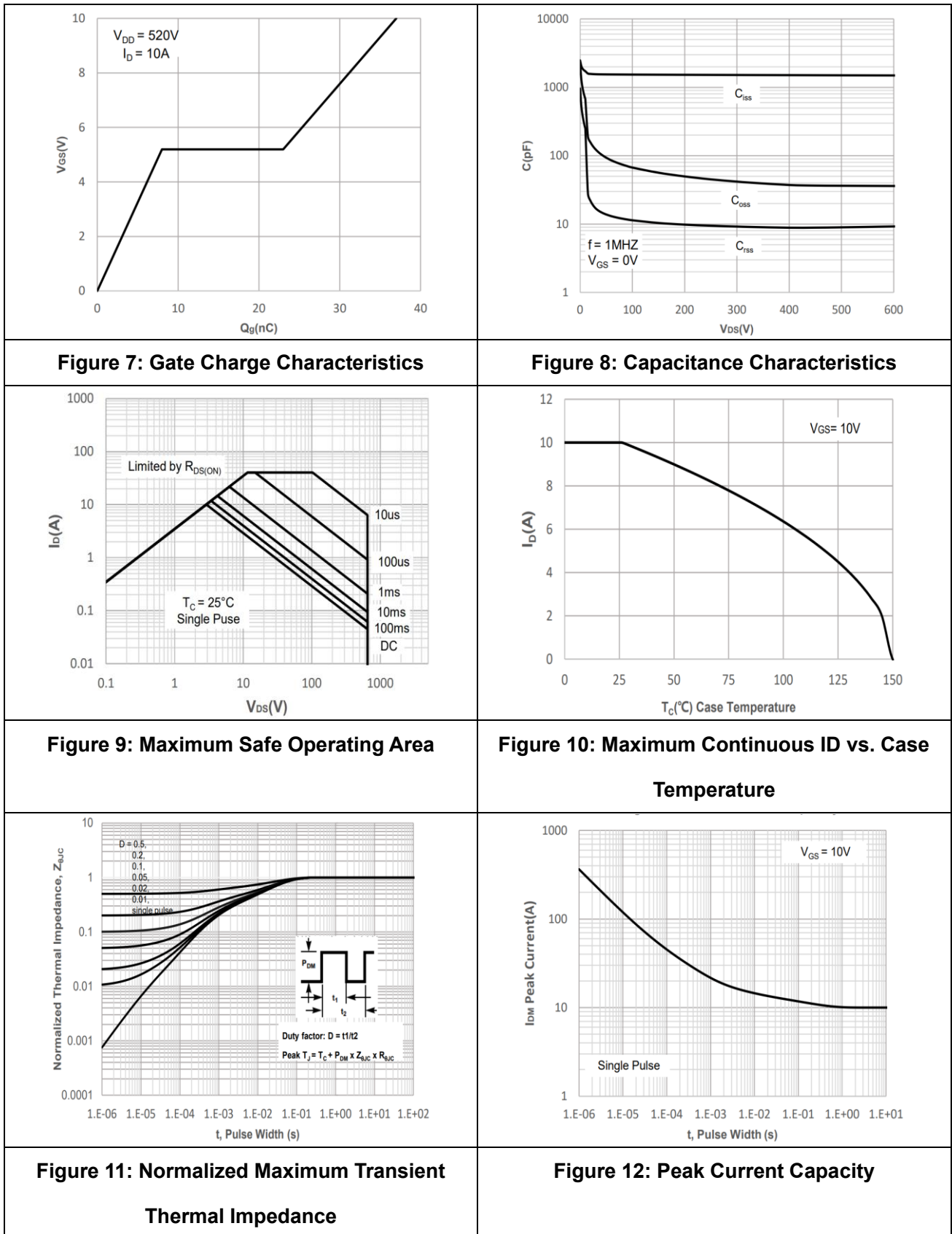


Figure 6: Normalized on Resistance vs. Junction Temperature



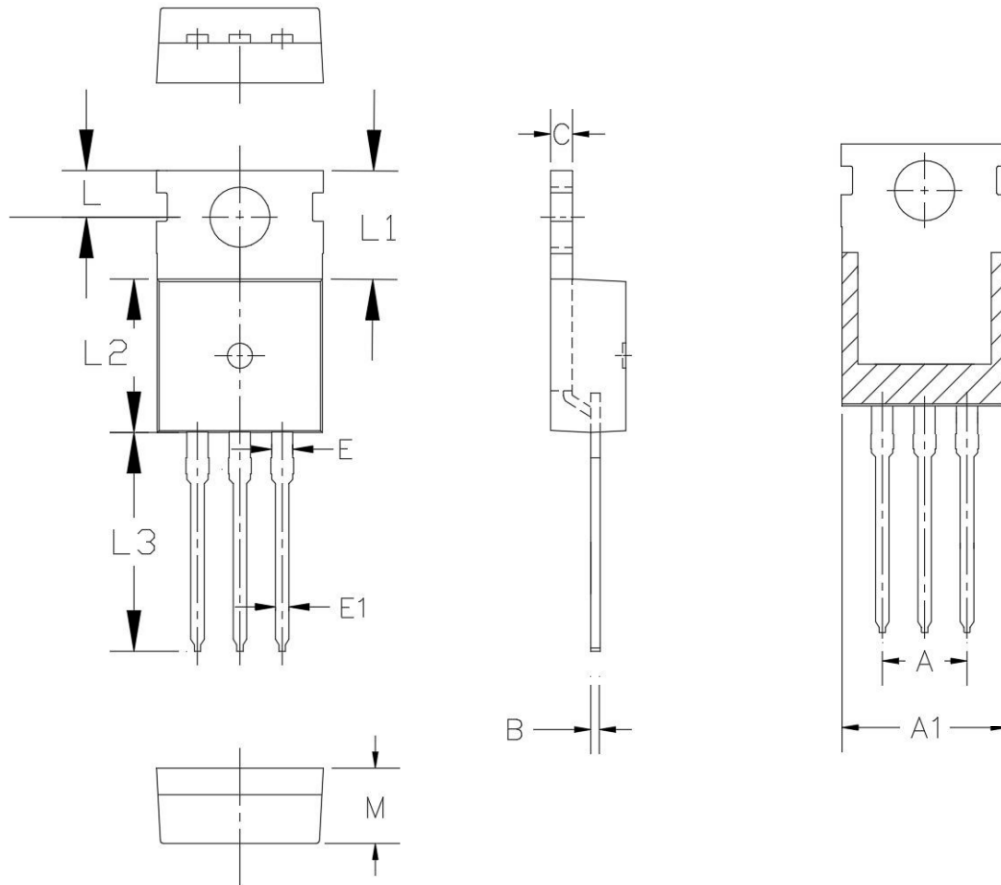
➤ Typical Performance Characteristics ($T_J=25^\circ\text{C}$ unless otherwise noted)





➤ Package Information

TO220-3L



Symbol	MILL IMETER		
	Min	Nom	Max
A	5.08 BSC		
A1	9.00	10.00	11.00
B	0.33	--	0.65
C	1.20	--	1.40
E	1.17	--	1.37
E1	0.60	--	1.10
L	2.50	--	3.00
L1	6.3	6.5	6.7
L2	8.95	--	9.75
L3	12.88	--	13.40
M	4.30	--	4.70



DISCLAIMER

SSCSEMI RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. SSCSEMI DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENCE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

THE GRAPHS PROVIDED IN THIS DOCUMENT ARE STATISTICAL SUMMARIES BASED ON A LIMITED NUMBER OF SAMPLES AND ARE PROVIDED FOR INFORMATIONAL PURPOSE ONLY. THE PERFORMANCE CHARACTERISTICS LISTED IN THEM ARE NOT TESTED OR GUARANTEED. IN SOME GRAPHS, THE DATA PRESENTED MAY BE OUTSIDE THE SPECIFIED OPERATING RANGE (E.G. OUTSIDE SPECIFIED POWER SUPPLY RANGE) AND THEREFORE OUTSIDE THE WARRANTED RANGE.

OUR PRODUCT SPECIFICATIONS ARE ONLY VALID IF OBTAINED THROUGH THE COMPANY'S OFFICIAL WEBSITE, CRM SYSTEM, OR OUR SALES PERSONNEL CHANNELS. IF CHANGES OR SPECIAL VERSIONS ARE INVOLVED, THEY MUST BE STAMPED WITH A QUALITY SEAL AND MARKED WITH A SPECIAL VERSION NUMBER TO BE VALID.