

MOSFET - N-Channel, Single

N-Channel, TO247-4L

650 V, 19 mΩ, 99 A

NVH4L025N065SC1

- Typ. $R_{DS(on)} = 19\text{ m}\Omega$ @ $V_{GS} = 18\text{ V}$
Typ. $R_{DS(on)} = 25\text{ m}\Omega$ @ $V_{GS} = 15\text{ V}$
- Ultra Low Gate Charge ($Q_{G(tot)} = 164\text{ nC}$)
- Low Capacitance ($C_{oss} = 278\text{ pF}$)
- 100% Avalanche Tested
- AEC-Q101 Qualified and PPAP Capable
- This Device is Pb-Free and is RoHS Compliant
- Automotive On Board Charger
- Automotive DC/DC Converter for EV/HEV

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

Drain-to-Source Voltage		V_{DSS}	650	V
Gate-to-Source Voltage		V_{GS}	-8/+22	V
Recommended Operation Values of Gate-to-Source Voltage		$T_C < 175^\circ\text{C}$	V_{GSop}	-5/+18 V
Continuous Drain Current (Note 1)	Steady State	$T_C = 25^\circ\text{C}$	I_D	99 A
Power Dissipation (Note 1)			P_D	348 W
Continuous Drain Current (Note 1)	Steady State	$T_C = 100^\circ\text{C}$	I_D	70 A
Power Dissipation (Note 1)			P_D	174 W
Pulsed Drain Current (Note 2)	$T_C = 25^\circ\text{C}$		I_{DM}	323 A
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55 to +175	$^\circ\text{C}$
Source Current (Body Diode)		I_S	75	A
Single Pulse Drain-to-Source Avalanche Energy ($I_{L(pk)} = 11.2\text{ A}$, $L = 1\text{ mH}$) (Note 3)		E_{AS}	62	mJ
Maximum Lead Temperature for Soldering (1/8" from case for 5 s)		T		

Junction-to-Case – Steady State (Note 1)		0.43		°C/W
Junction-to-Ambient – Steady State (Note 1)		40		

(T_J = 25°C unless o

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Drain-to-Source Breakdown Voltage	V _{(BR)DSS}	650	-	-	V
Drain-to-Source Breakdown Voltage Temperature Coefficient	V _{(BR)DSS} /T _J	-	0.15	-	V/°C
Zero Gate Voltage Drain Current	I _{DSS}	-	-	10	μA
		-	-	1	mA
Gate-to-Source Leakage Current	I _{GSS}	-	-	250	nA

(Note 2)

Gate Threshold Voltage	V _{GS(TH)}	1.8	2.8	4.3	V
Recommended Gate Voltage	V _{GOP}	-5	-	+18	V
Drain-to-Source On Resistance	R _{DS(on)}	-	25	-	mΩ
		-	19	28.5	
		V _{GS} = 18 V, I _D = 45 A, T _J = 175°C			
Forward Transconductance	g _{FS}	V _{DS} = 10 V, I _D = 45 A			S

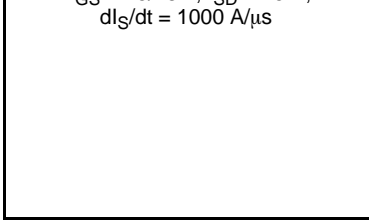
3480

Input Capacitance	C _{ISS}	V _{GS} = 0 V, f = 1 MHz, V _{DS} = 325 V	-	3480	-	pF
Output Capacitance	C _{OSS}					

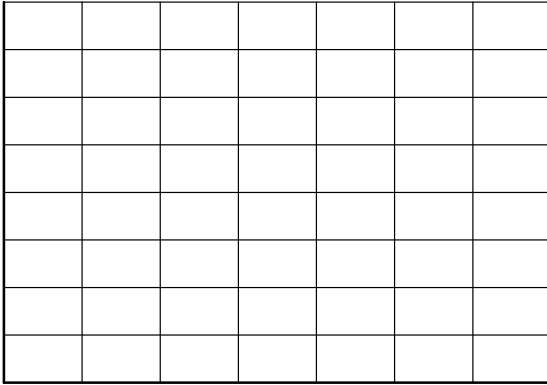
Reverse Recovery Charge

RR
QQ

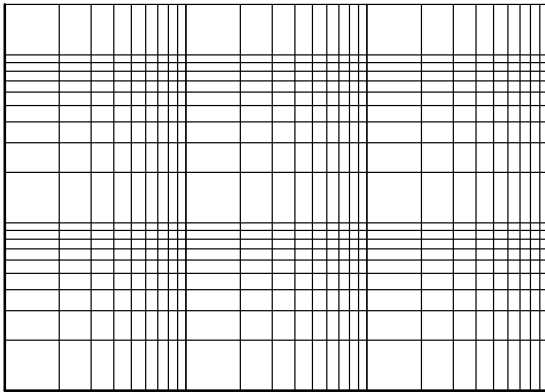
$di_s/dt = 1000 \text{ A}/\mu\text{s}$



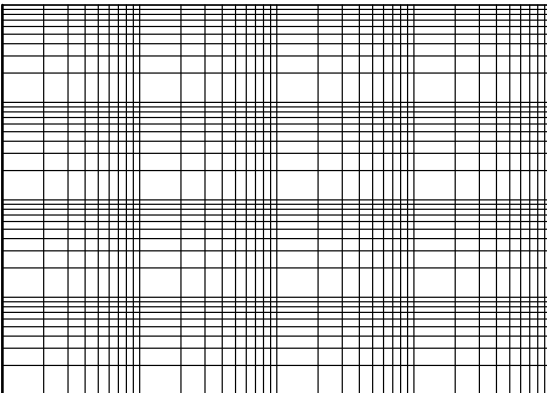
V



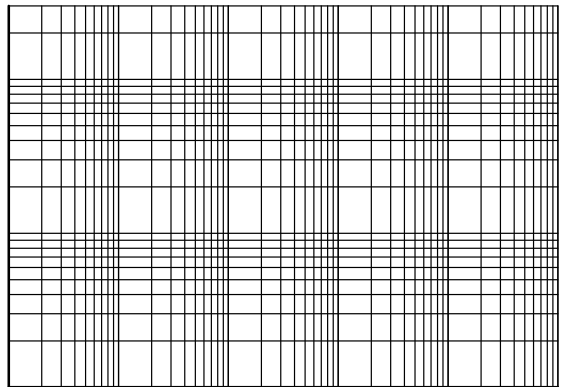
Q_g , GATE CHARGE (nC)



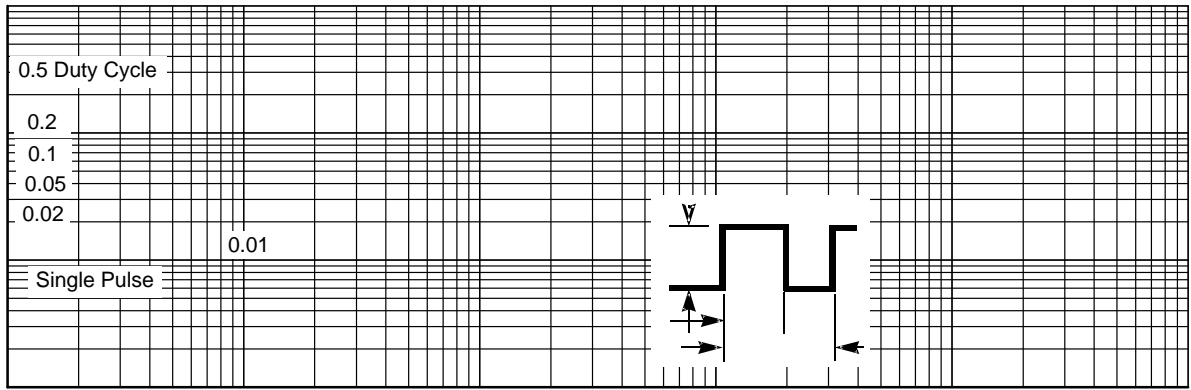
t_{AV} , TIME IN AVALANCHE (ms)



V_{DS} , DRAIN-TO-SOURCE VOLTAGE (V)



$Z_{\theta JC}(t)$, EFFECTIVE TRANSIENT
THERMAL RESISTANCE ($^{\circ}\text{C}/\text{W}$)



t , RECTANGULAR PULSE DURATION (s)

TO-247-4LD
CASE 340CJ
ISSUE A

DATE 16 SEP 2019

A	E	A	B	E1	\emptyset p1
			A2		D2
		Q			
E/2					D1
		D	\emptyset		
			L1		
b2			A1		
b1 (3X)		L			
	1	4			
e1		b(4X)	c		
e 2X					
\oplus 0.254 (M) B A (M)					

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