

BRCS012N10SHTP

Rev.A Jul.-2025

/ Descriptions

TOLT-16L N

N-Channel MOSFET in a TOLT-16L Plastic Package.

/ Features

$V_{DS}(V)=100V$ $I_D=300A$

$R_{DS(ON)}@10V$ 1.25m (Typ. 1.1 m)

$R_{DS(ON)}@6V$ 1.85m (Typ. 1.55m)

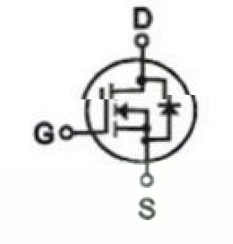
HF Product.

/ Applications

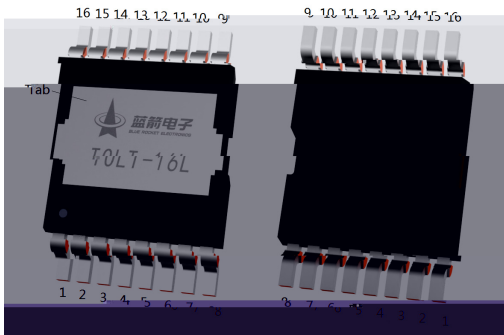
BMS

BMS, Drones, High power inverter system, Light electric vehicles.

/ Equivalent Circuit



/ Pinning



PIN1、2、3、4、5、6、7: S

PIN8: G

PIN9、10、11、12、13、14、15、16、Tab: D

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings($T_A=25$)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	100	V
Drain Current(DC)	$I_D(T_C=25^{\circ}C)$	300	A
	$I_D(T_C=100^{\circ}C)$	258	A
Drain Current – Pulsed ^{*,**}	I_{DM}	1200	A
Gate-Source Voltage	V_{GS}	± 20	V
Power Dissipation	P_{tot}	375	W
Continuous-Source Current	I_S	300	A
Single Pulse Avalanche Energy($V_{DD}=50V, L=1.0mH$)	E_{AS}	2450	mJ
Junction and Storage Temperature Range	T_j, T_{stg}	-55 to 175	
Thermal resistance, junction – ambient ^{**}	R_{JA}	52	/ W
Thermal resistance, junction – case ^{**}	R_{JC}	0.4	

Notes:

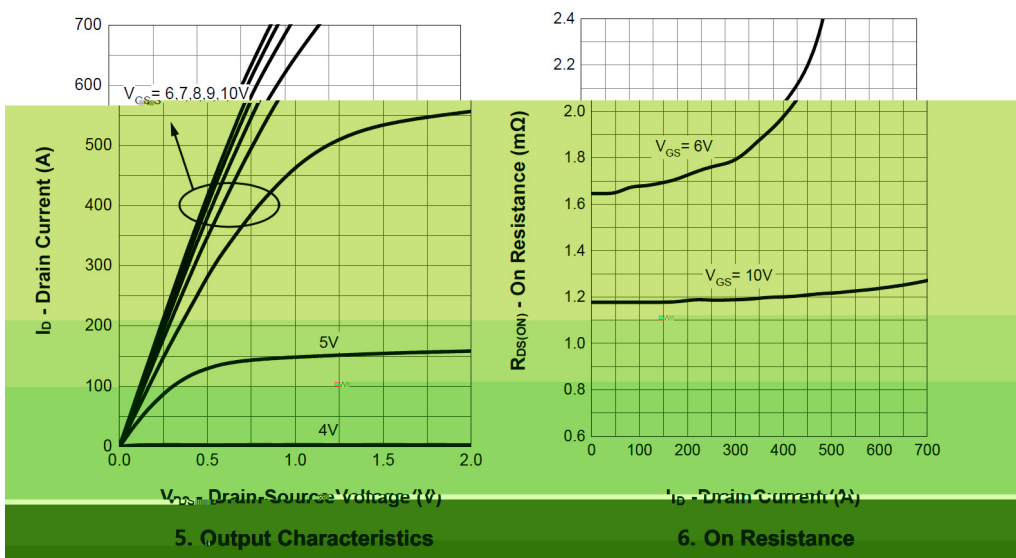
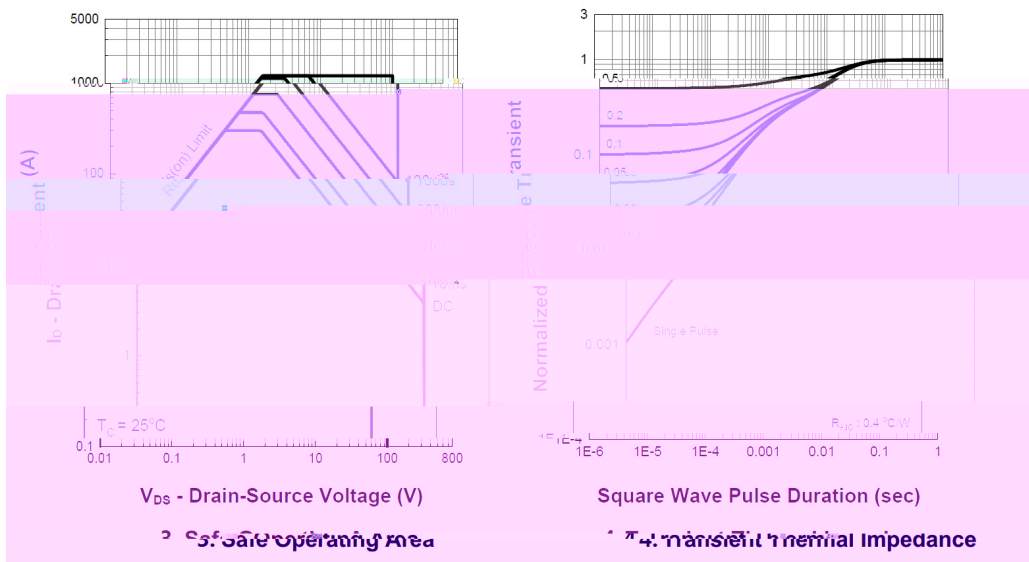
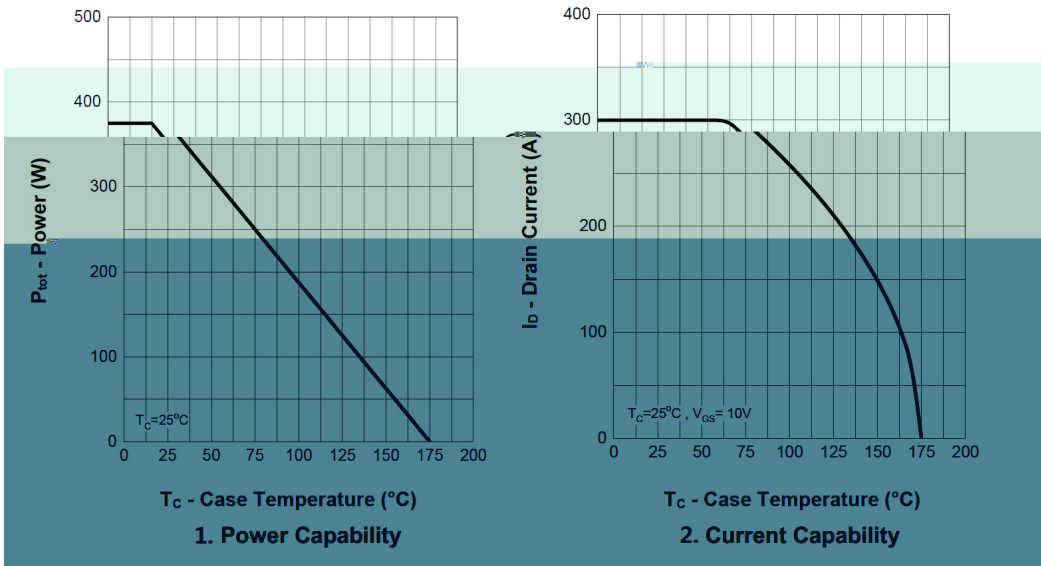
* Pulse width 300 μs , duty cycle 2 %^{**} Surface Mounted on minimum footprint pad area^{***} Limited by bonding wire/ Electrical Characteristics($T_A=25$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu A, V_{GS}=0V$	100			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=80V, V_{GS}=0V$			1	μA
Gate-Body leakage current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	2		4	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=50A$		1.1	1.25	m
		$V_{GS}=6V, I_D=30A$		1.55	1.85	m
Diode Forward Voltage	V_{SD}	$I_S=50A, V_{GS}=0V$			1.3	V
Reverse Recovery Time	t_{rr}	$I_{DS} = 50 A, V_{GS} = 0 V$ $di_{SD}/dt = 100 A/\mu s$		89		nS
Reverse Recovery Charge	Q_{rr}			160		nC
Input Capacitance	C_{iss}	$V_{DS}=50V, V_{GS}=0V$ $f=1.0MHz$		13374		pF
Output Capacitance	C_{oss}			2026		
Reverse Transfer Capacitance	C_{rss}			118		

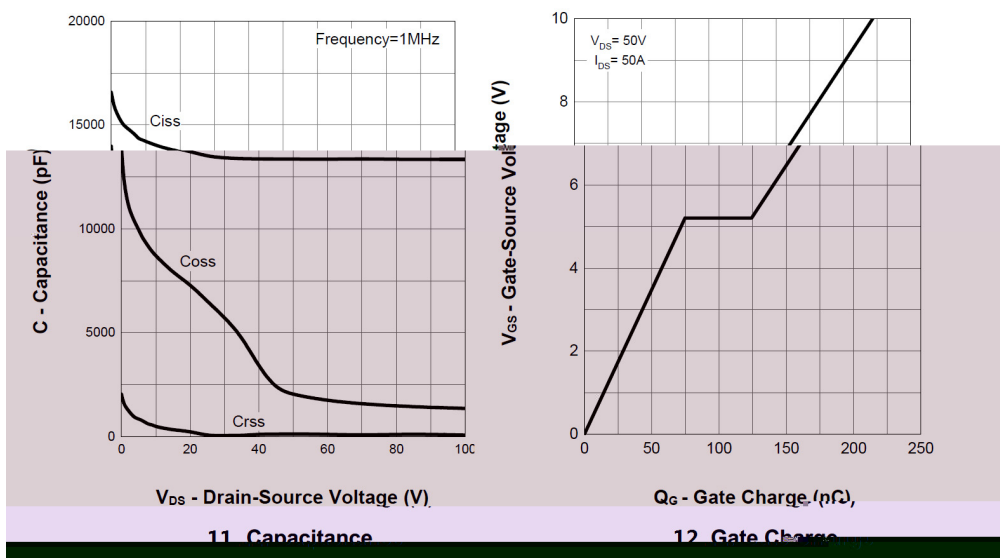
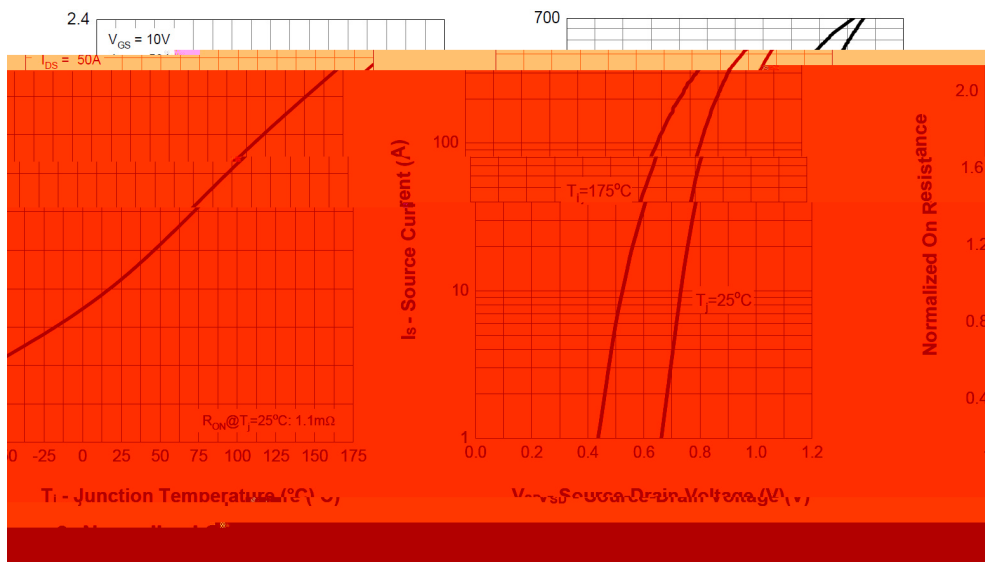
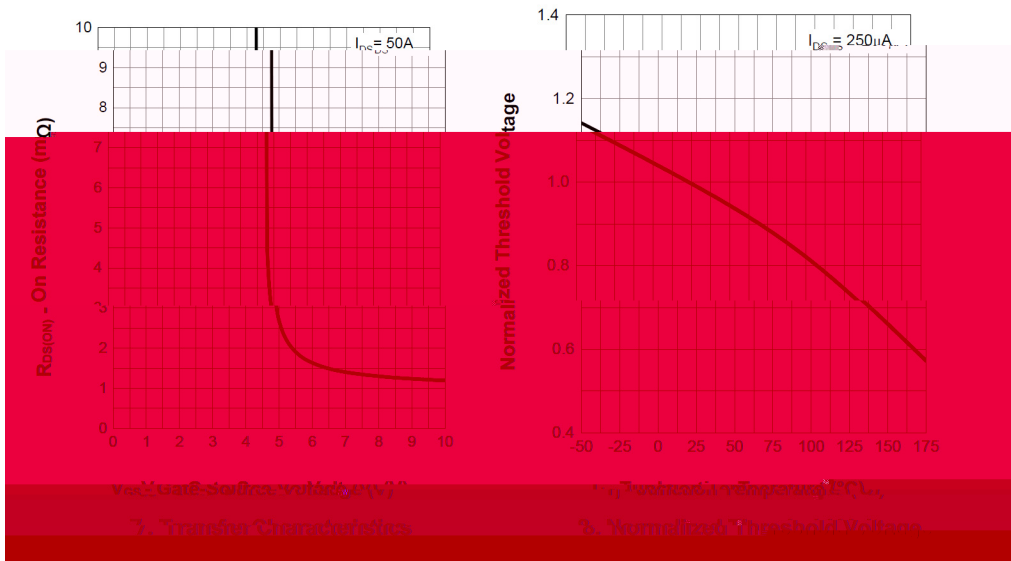
/ Electrical Characteristics($T_A=25$)

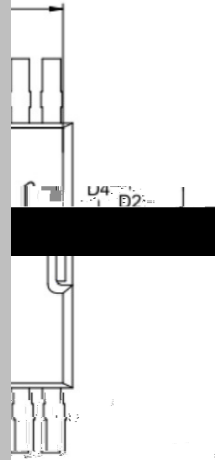
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	Q_g	$V_{GS}=10V, V_{DS}=50V$ $I_{DS}=50A$		222		nC
Gate Source Charge	Q_{gs}			75		
Gate Drain Charge	Q_{gd}			49		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V, V_{DS}=50V$ $R_G=3.9\Omega, R_L=1\Omega$ $I_D=50A$		41		ns
Turn-On Rise Time	t_r			116		
Turn-Off Delay Time	$t_{d(off)}$			137		
Turn-Off Fall Time	t_f			80		

/ Electrical Characteristic Curve



/ Electrical Characteristic Curve

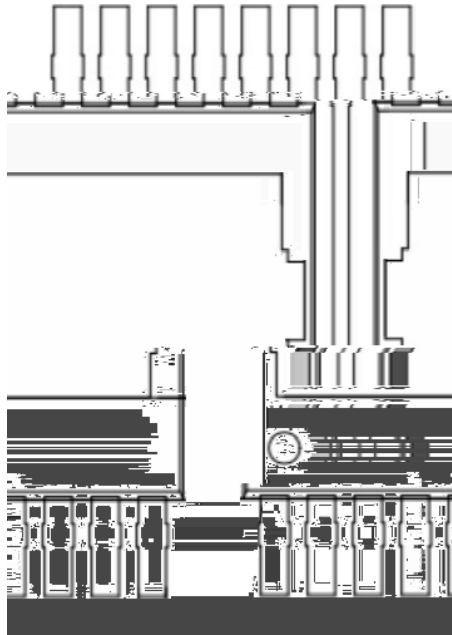




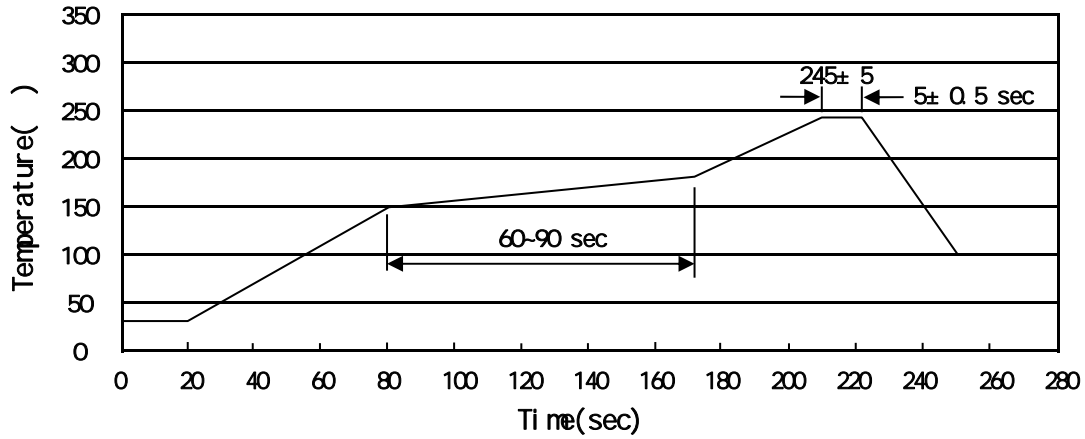
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MAX.

10.100



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Note:

- | | | | | | |
|---|-------|-----|----|-----------|---|
| 1 | 150 | 180 | 60 | 90sec; | 1.Preheating:150~180 , Time:60~90sec. |
| 2 | 245±5 | | | 5±0.5sec; | 2.Peak Temp.:245±5 , Duration:5±0.5sec. |
| 3 | | | 2 | 10 /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering Heat Test Conditions

260±5 10±1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension (unit mm ³)		
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box
TOLT-16L	2,000	1	2,000	TBD	TBD	TBD	TBD	TBD

/ Notices

All information provided in this document is subject to legal disclaimers.