

/ Descriptions

TOLT-16L N

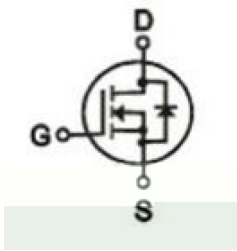
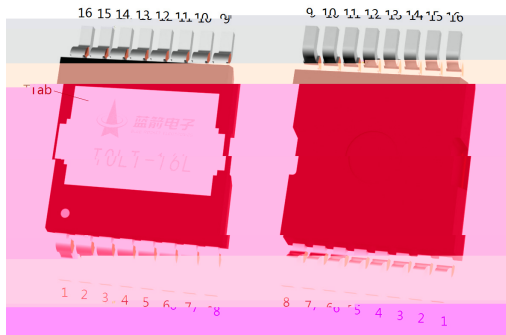
/ Features

$V_{DS}(V)=60V$ $I_D=860A$
 $R_{DS(ON)}@10V \leq 0.5m\Omega$ (Typ. 0.38 m Ω)
 $R_{DS(ON)}@6V \leq 0.9m\Omega$ (Typ. 0.66 m Ω)
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($T_A=25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Drain Current(DC)	$I_D(T_C=25^\circ\text{C})$	860	A
	$I_D(T_C=100^\circ\text{C})$	607	A
Drain Current – Pulsed ^{*,**}	I_{DM}	2714	A
Gate-Source Voltage	V_{GS}	± 20	V
Power Dissipation	P_{tot}	680	W
Single Pulse Avalanche Energy	E_{AS}	7455	mJ
Junction and Storage Temperature Range	T_j, T_{stg}	-55 to 175	
Thermal resistance, junction – ambient ^{**}	$R_{\theta JA}$	48	
Thermal resistance, junction – case ^{**}	$R_{\theta JC}$	0.22	

Notes:

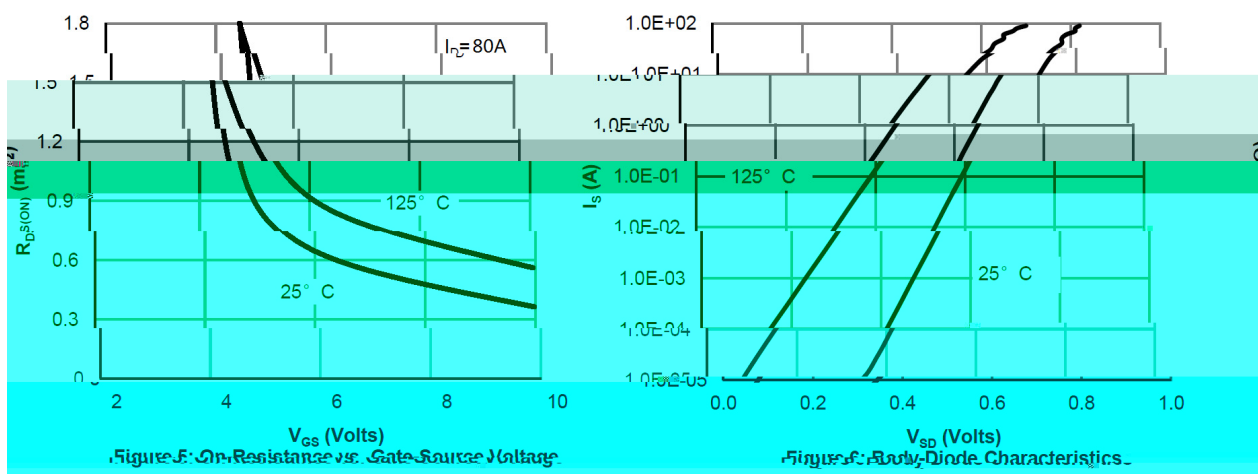
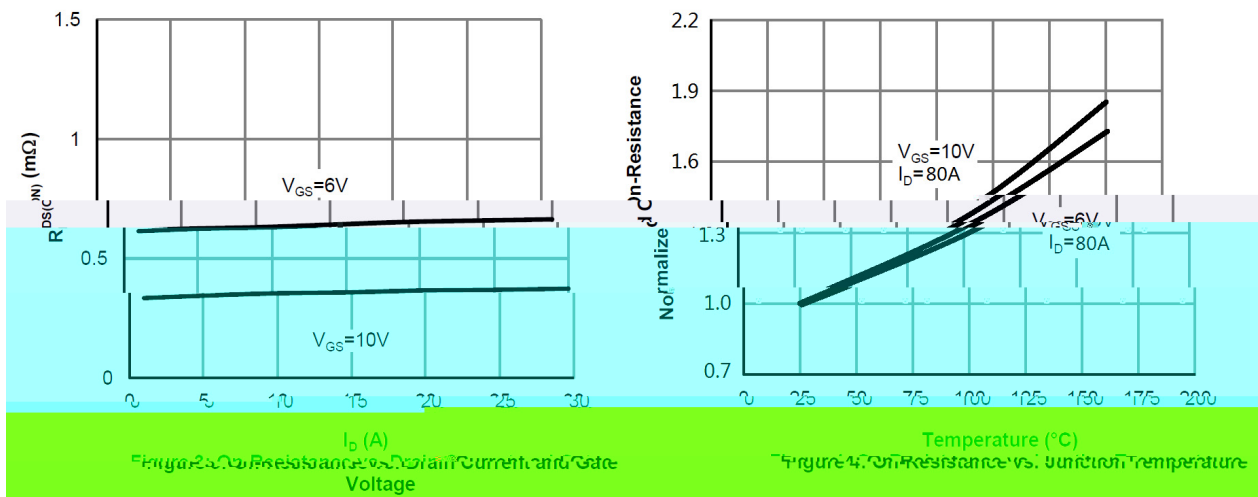
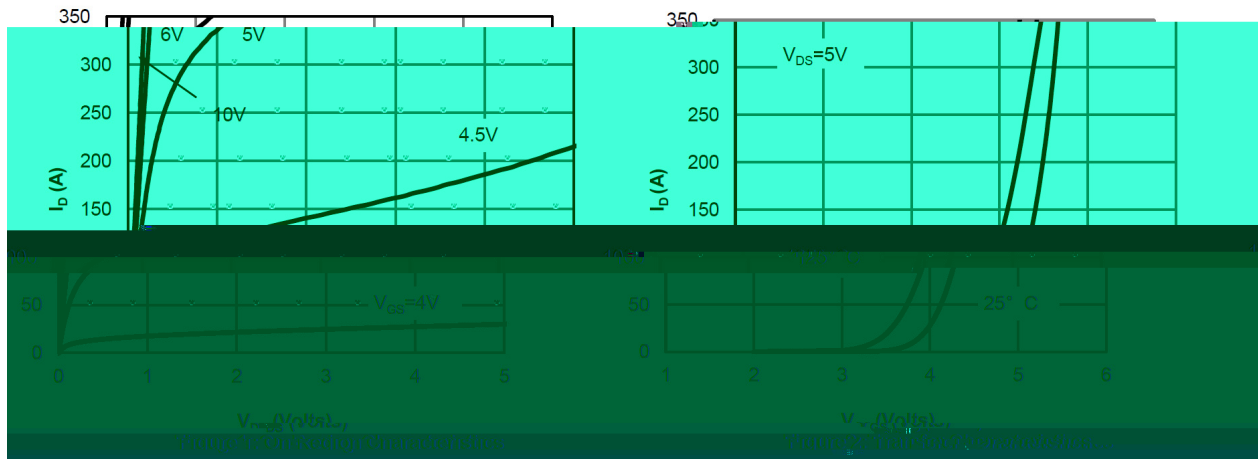
* Pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$ ^{**} Surface Mounted on minimum footprint pad area^{***} Limited by bonding wire/ Electrical Characteristics($T_A=25^\circ\text{C}$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\ \mu\text{A}, V_{GS}=0\text{V}$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=48\text{V}, V_{GS}=0\text{V}$			1	μA
Gate-Body leakage current	I_{GSS}	$V_{DS}=0\text{V}, V_{GS}=\pm 20\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\ \mu\text{A}$	2		4	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{V}, I_D=80\text{A}$		0.38	0.5	m
		$V_{GS}=6\text{V}, I_D=80\text{A}$		0.66	0.9	m
Diode Forward Voltage	V_{SD}	$I_S=5\text{A}, V_{GS}=0\text{V}$			1.3	V
Reverse Recovery Time	t_{rr}	$I_D = 50\text{A}, V_{DS} = 30\text{V}$ $dI_{SD}/dt = 100\text{A}/\mu\text{s}$		71.9		nS
Reverse Recovery Charge	Q_{rr}			126		nC
Gate resistance	R_g	$V_{DS}=0\text{V}, V_{GS}=0\text{V}$ $f=1.0\text{MHz}$		2.5		Ω
Input Capacitance	C_{iss}	$V_{DS}=30\text{V}, V_{GS}=0\text{V}$ $f=1.0\text{MHz}$		16790		pF
Output Capacitance	C_{oss}			6410		
Reverse Transfer Capacitance	C_{rss}			1560		

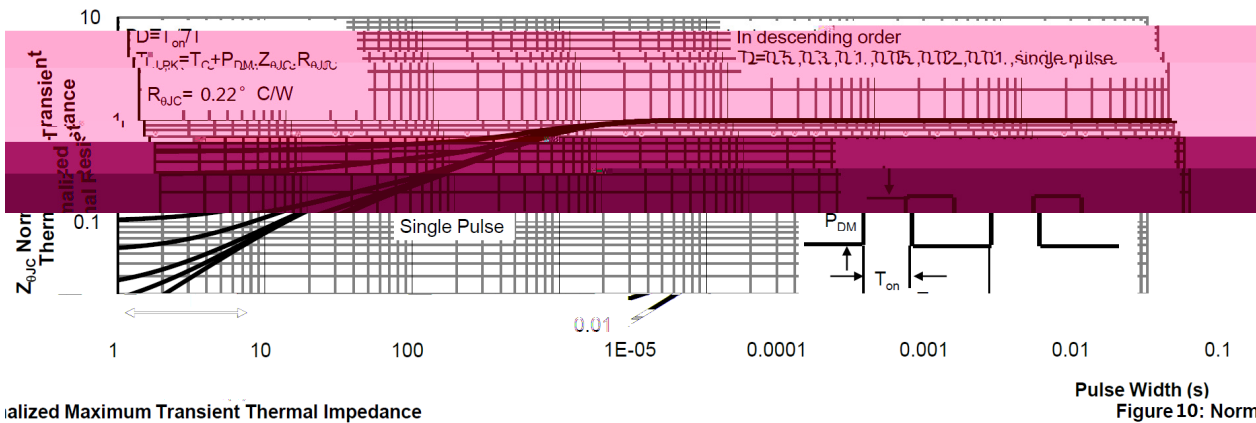
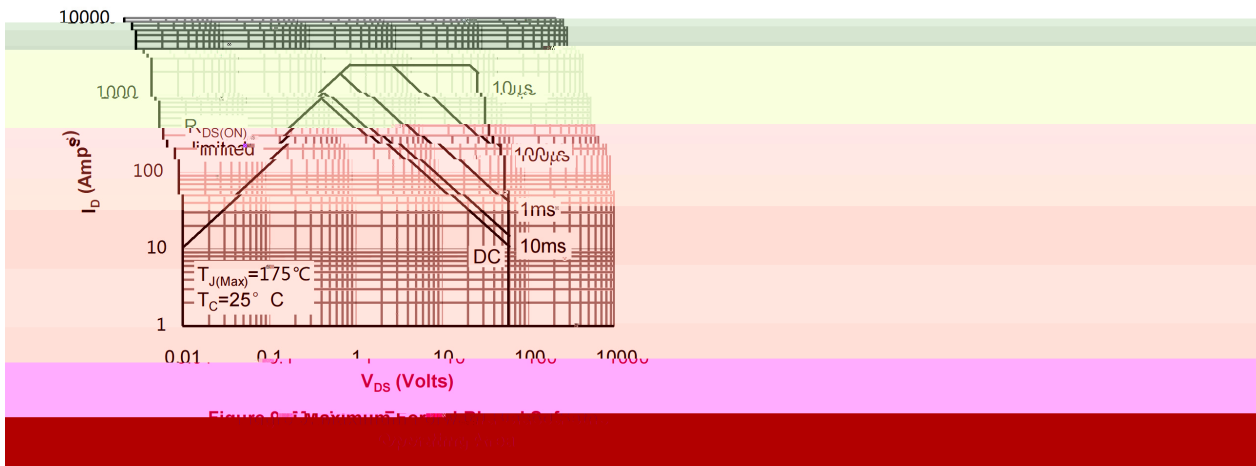
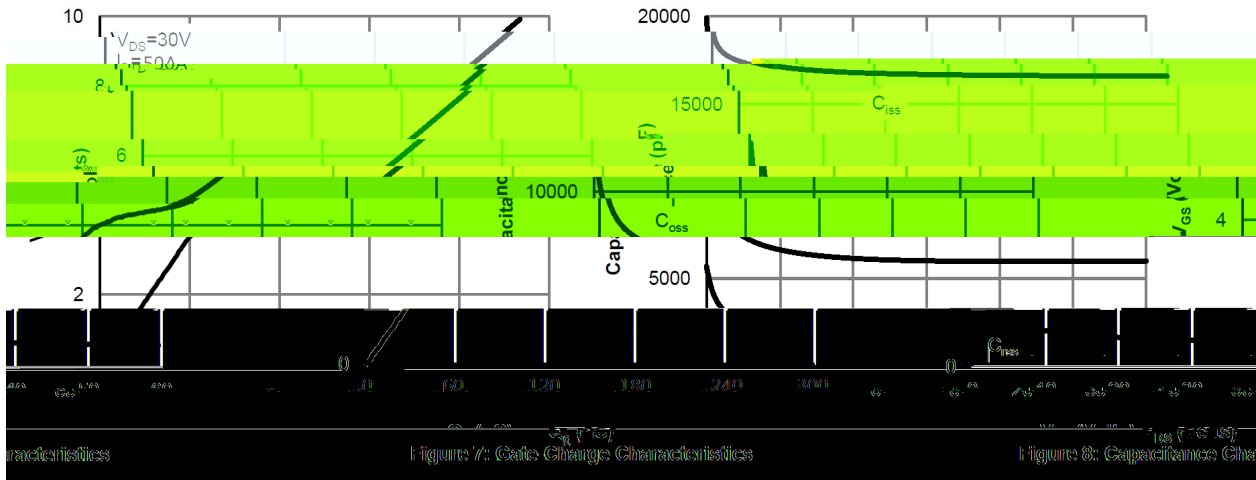
/ Electrical Characteristics($T_A=25^\circ\text{C}$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	Q_g	$V_{GS}=10V, V_{DS}=30V$ $I_{DS}=50A$		280		nC
Gate Source Charge	Q_{gs}			56.2		
Gate Drain Charge	Q_{gd}			77.2		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V, V_{DS}=30V$ $R_G=3\Omega, I_D=50A$		42.1		ns
Turn-On Rise Time	t_r			195		
Turn-Off Delay Time	$t_{d(off)}$			177		
Turn-Off Fall Time	t_f			125		

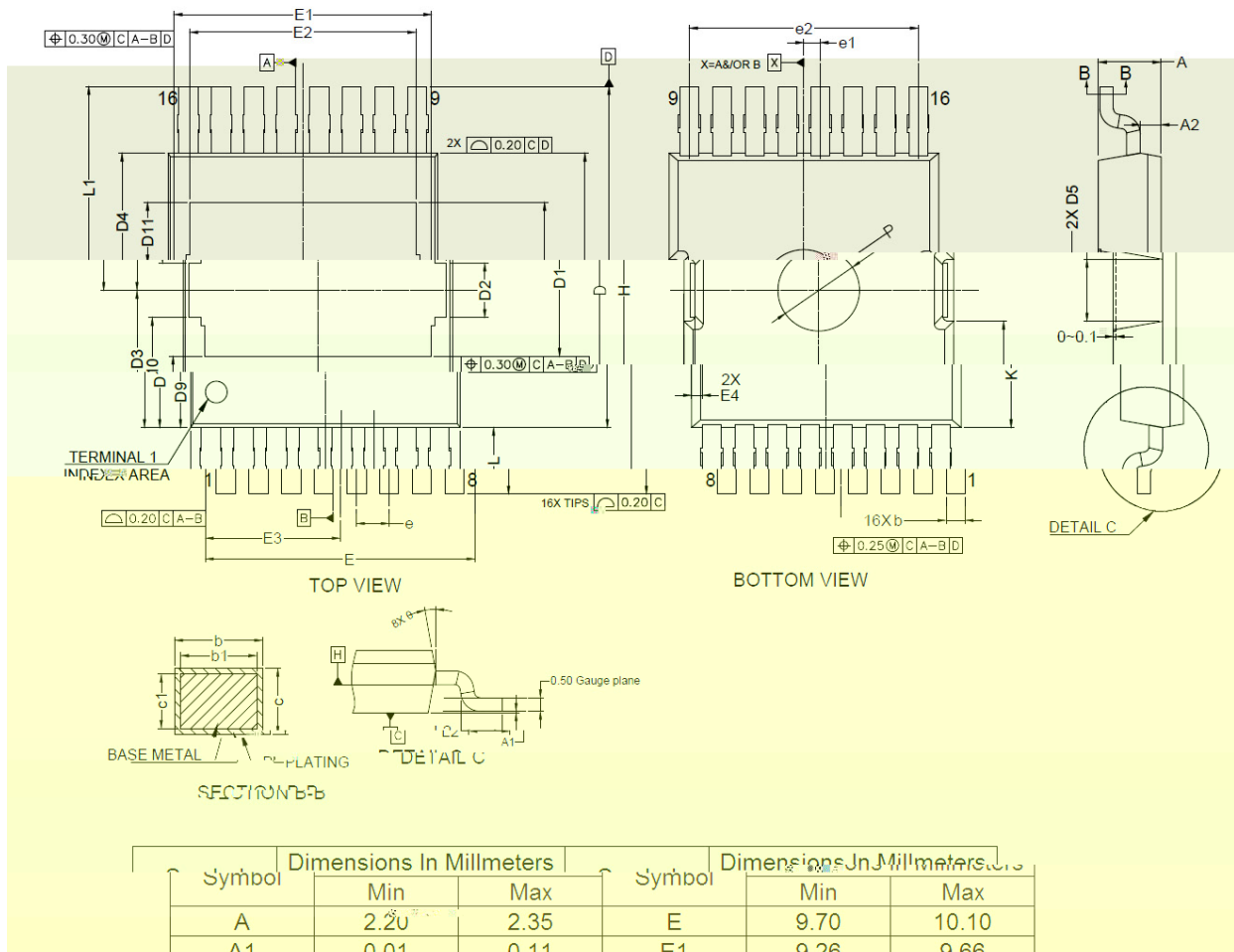
/ Electrical Characteristic Curve



Electrical Characteristic Curve

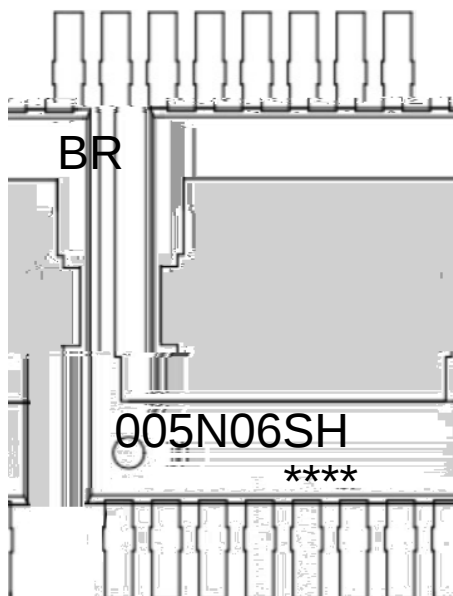


/ Package Dimensions



Symbol	Min	Max	Symbol	Min	Max
A	2.20	2.35	E	9.70	10.10
A1	0.01	0.11	F1	9.26	9.66
A2	0.56	0.96	E2	8.10	8.50
b	0.60	0.85	E3	4.75	5.15
b1	0.60	0.80	E4	0.20	0.60
c	0.05	0.09	e1	0.60 BSC	
c1	0.05	0.09	e2	8.40 BSC	
c2	0.05	0.09	H	14.80	15.20
D	10.30		K	3.71	4.11
D1	5.87		L	2.25	2.65
D2	2.20		L1	7.30	7.70
D3	5.25		L2	1.30	1.70
D4	5.13		R	0.07	-
D5	2.48		P	2.90	3.10
D9	2.82		θ	4°	10°
D10	4.25				
D11	2.44				

/ Marking Instructions



005N06SH

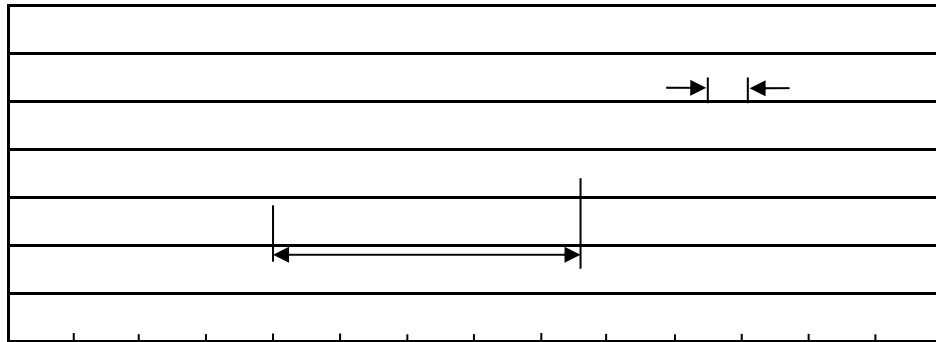
Note:

BR: Company Code

005N06SH: Product Type Code

****: Lot No. Code, code change with Lot No.

() / Temperature Profile for IR Reflow Soldering(Pb-Free)



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
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/ 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	1,300	1	1,300	4	5,200	13"×24	357×340×41	377×357×180

/ Notices

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