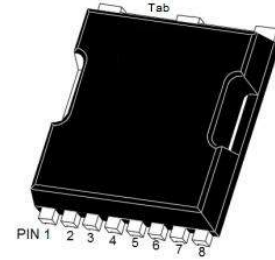


■ PRODUCT CHARACTERISTICS

VDSS	40V
$R_{DS(on)}$ typ.(@ $V_{GS}=10V$ )	0.6mΩ
ID	400A

■ FEATURES

Surface-mounted package Advanced trench cell design Super trench

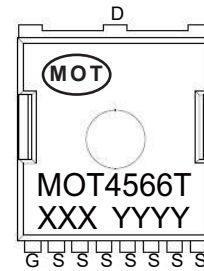


TOLL-8L

■ APPLICATIONS

High power system inverter  
Light electric vehicles  
BMS  
Drones

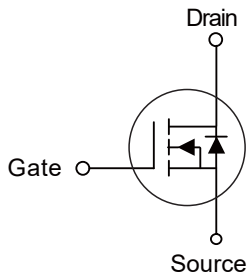
Pin configuration (Top view)



XXX = Lot Number  
YYYY = Year Week

Marking

■ SYMBOL



Order information

Device	Package	Shipping
MOT4566T/TR	TOLL-8L	4000/Tape&Reel

**■ ABSOLUTE MAXIMUM RATINGS (T<sub>C</sub> = 25°C unless otherwise noted)**

Parameter	Symbol	Conditions	Min	Max	Unit
Drain-Source Voltage	V <sub>DS</sub>	T <sub>C</sub> = 25 °C	40	-	V
Gate-Source Voltage	V <sub>GS</sub>	T <sub>C</sub> = 25 °C	-	±20	V
Drain Current ( DC ) *	I <sub>D</sub>	T <sub>C</sub> = 25 °C, V <sub>GS</sub> = 10 V	-	400	A
Drain Current ( Pulsed ) ***	I <sub>DM</sub>	T <sub>C</sub> = 25 °C, V <sub>GS</sub> = 10 V	-	1600	A
Drain power dissipation	P <sub>tot</sub>	T <sub>C</sub> = 25 °C	-	600	W
Storage Temperature	T <sub>stg</sub>		-55	175	°C
Junction Temperature	T <sub>J</sub>		-	175	°C
Continuous-Source Current	I <sub>S</sub>	T <sub>C</sub> = 25 °C	-	400	A
Single Pulsed Avalanche Energy	E <sub>AS</sub>	V <sub>DD</sub> = 50V , L= 1 mH	-	1352	mJ
Thermal Resistance- Junction to Ambient**	R <sub>θJA</sub>		-	32.8	°C/W
Thermal Resistance- Junction to Case**	R <sub>θJC</sub>		-	0.45	

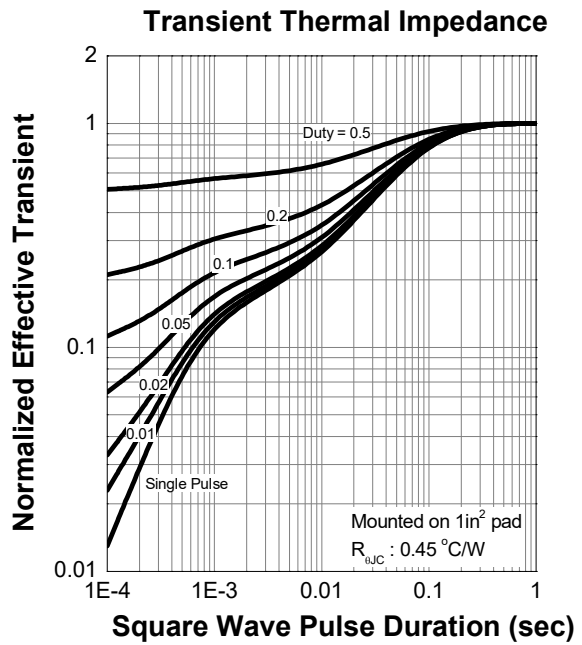
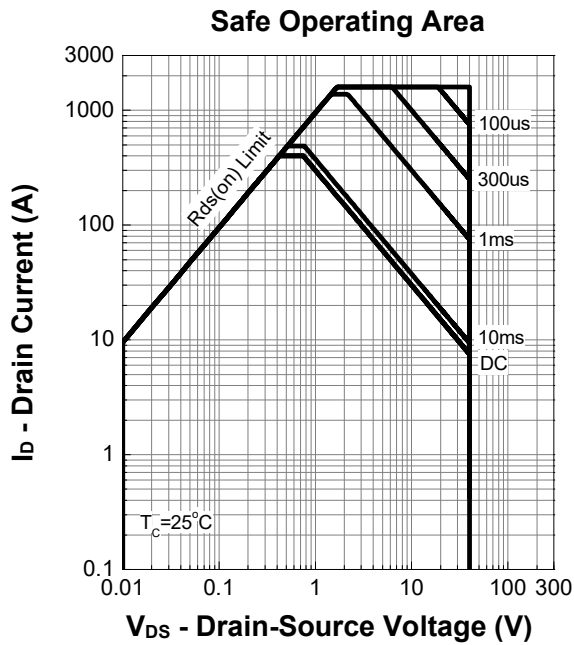
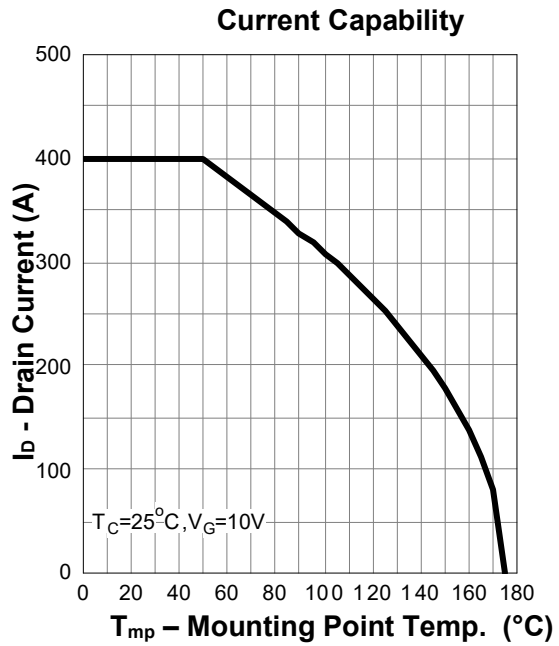
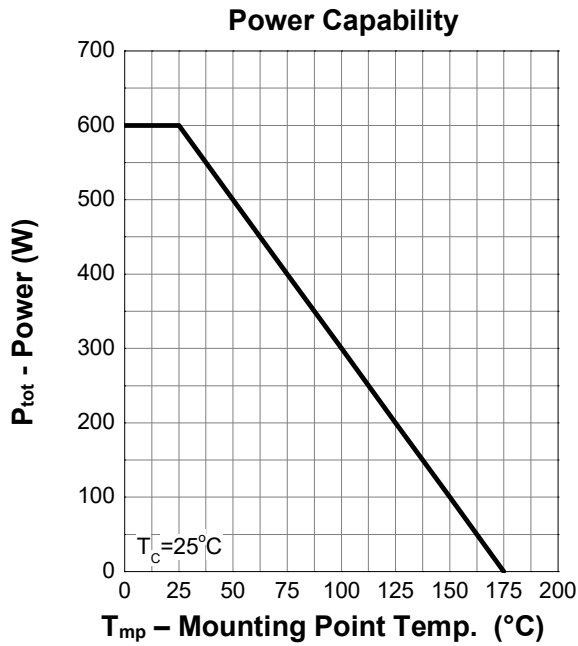
**■ ELECTRICAL CHARACTERISTICS ( T<sub>C</sub>=25°C, unless otherwise specified)**

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> = 0 V, I <sub>DS</sub> = 250 μA	40	-	-	V
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>DS</sub> = 250 μA	1	-	2	V
Drain Leakage Current	I <sub>DSS</sub>	V <sub>DS</sub> = 32 V, V <sub>GS</sub> = 0 V	-	-	1	μA
Gate Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = 0 V, V <sub>GS</sub> = ± 20 V	-	-	±100	nA
On-State Resistance <sup>a</sup>	R <sub>DS(ON)</sub>	V <sub>GS</sub> = 10 V, I <sub>DS</sub> = 50A	-	0.6	0.7	mΩ
		V <sub>GS</sub> = 4.5 V, I <sub>DS</sub> = 20A	-	0.95	1.1	
<b>Diode Characteristics</b>						
Diode Forward Voltage <sup>a</sup>	V <sub>SD</sub>	I <sub>SD</sub> = 50A, V <sub>GS</sub> = 0 V	-	-	1.3	V
Reverse Recovery Time	t <sub>rr</sub>	I <sub>DS</sub> = 50A, V <sub>GS</sub> = 0 V dI <sub>SD</sub> /dt = 100 A/μs	-	97	-	nS
Reverse Recovery Charge	Q <sub>rr</sub>		-	162	-	nC
<b>Dynamic Characteristics</b>						
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> = 0 V, V <sub>DS</sub> = 20 V Frequency = 1 MHz	-	7275	-	pF
Output Capacitance	C <sub>oss</sub>		-	3183	-	
Reverse Transfer Capacitance <sup>b</sup>	C <sub>rss</sub>		-	159	-	
Turn-on Delay Time	t <sub>d(on)</sub>	V <sub>DS</sub> = 20 V, V <sub>GEN</sub> = 10 V, R <sub>G</sub> = 4.5 Ω, R <sub>L</sub> = 0.4 Ω, I <sub>DS</sub> = 50A	-	24	-	nS
Turn-on Rise	t <sub>r</sub>		-	93	-	
Turn-off Delay Time	t <sub>d(off)</sub>		-	87	-	
Turn-off Fall Time	t <sub>f</sub>		-	80	-	
<b>Gate Charge Characteristics<sup>b</sup></b>						
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = 20 V, V <sub>GS</sub> = 10 V, I <sub>DS</sub> = 50A	-	124	-	nC
Gate-Source Charge	Q <sub>gs</sub>		-	38	-	
Gate-Drain Charge	Q <sub>gd</sub>		-	31	-	

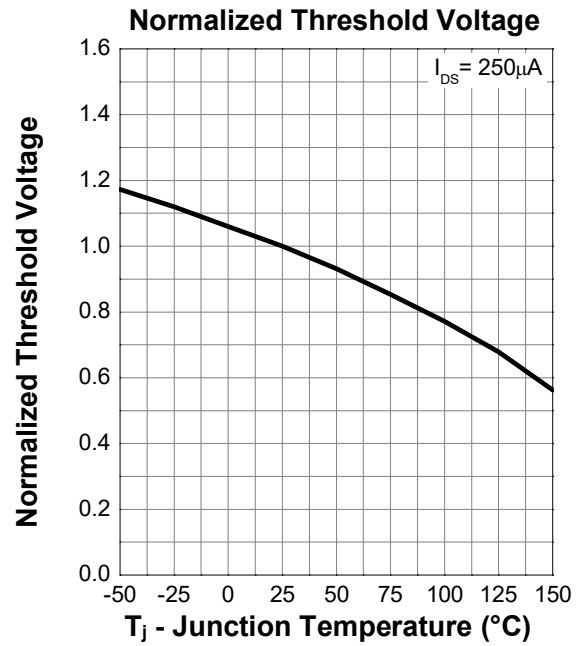
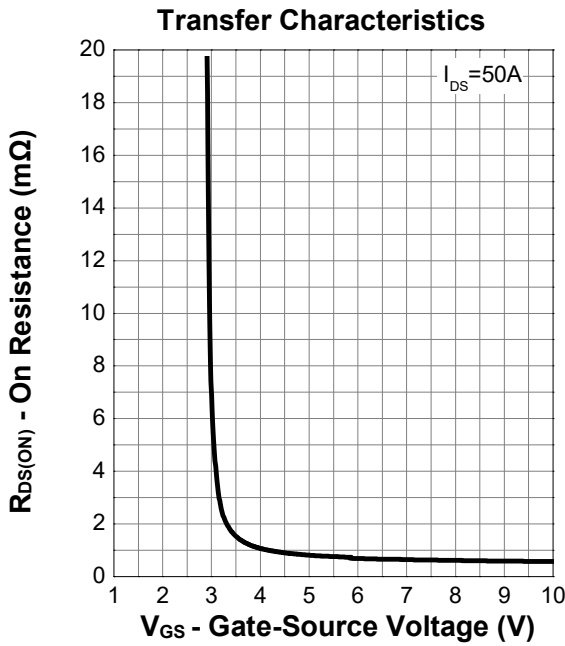
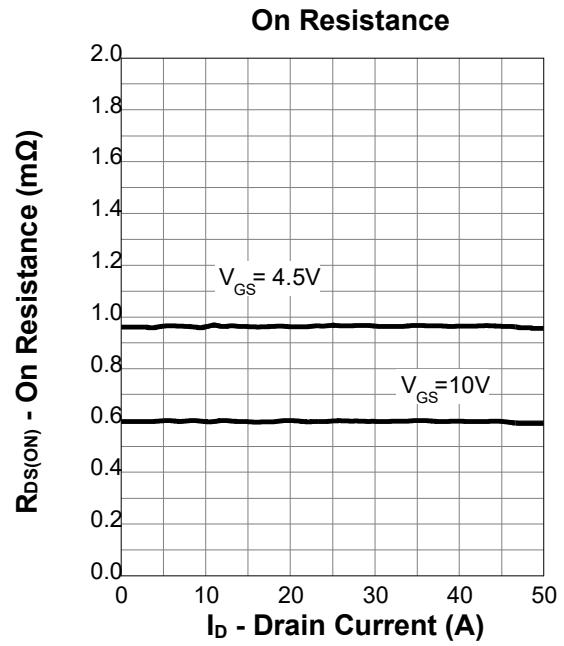
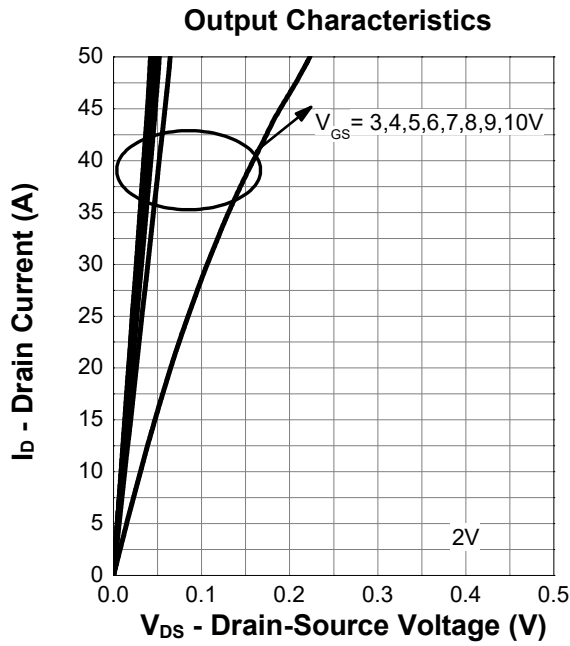
**Notes :**

- \* Pulse width ≤ 300 μs, duty cycle ≤ 2 %
- \*\* Surface Mounted on minimum footprint pad area.
- \*\*\* Limited by bonding wire
- a : Pulse test ; pulse width ≤ 300 μs, duty cycle ≤ 2%
- b : Guaranteed by design, not subject to production testing

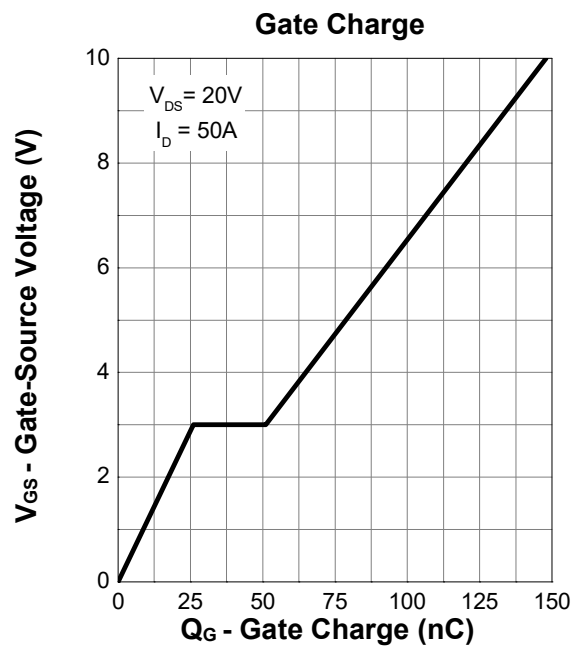
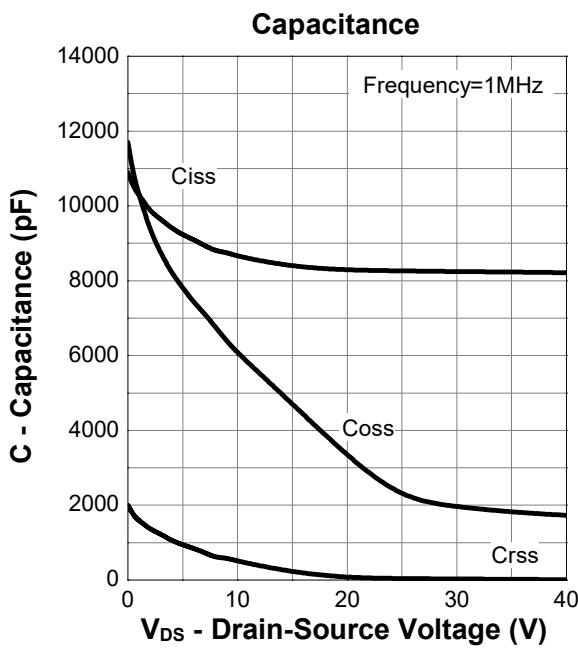
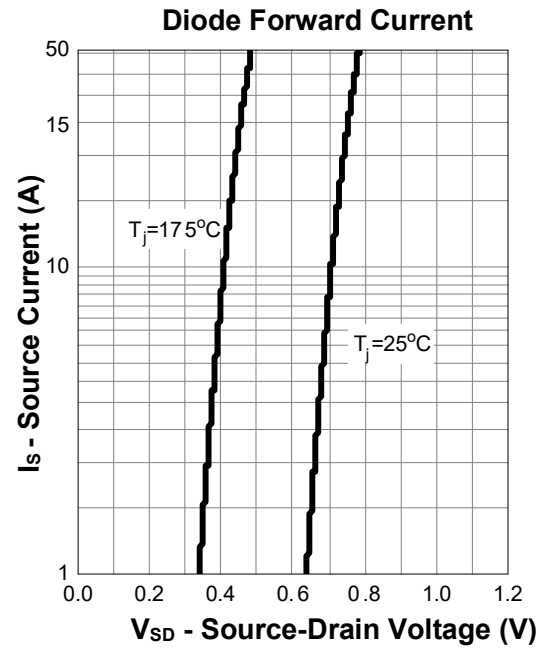
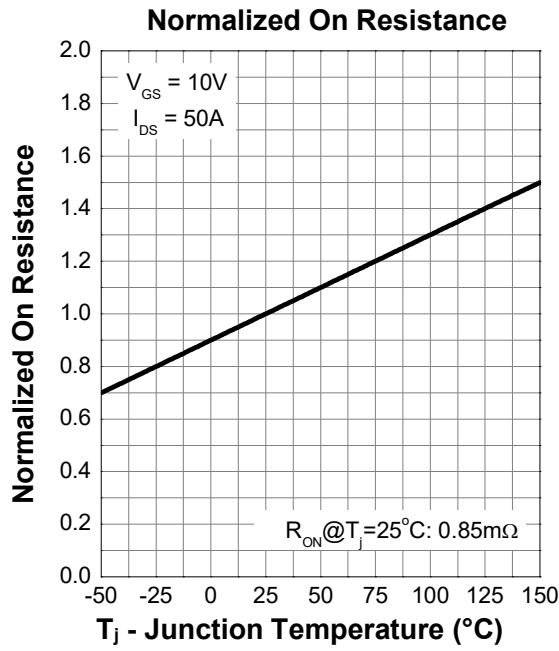
■ TYPICAL CHARACTERISTICS



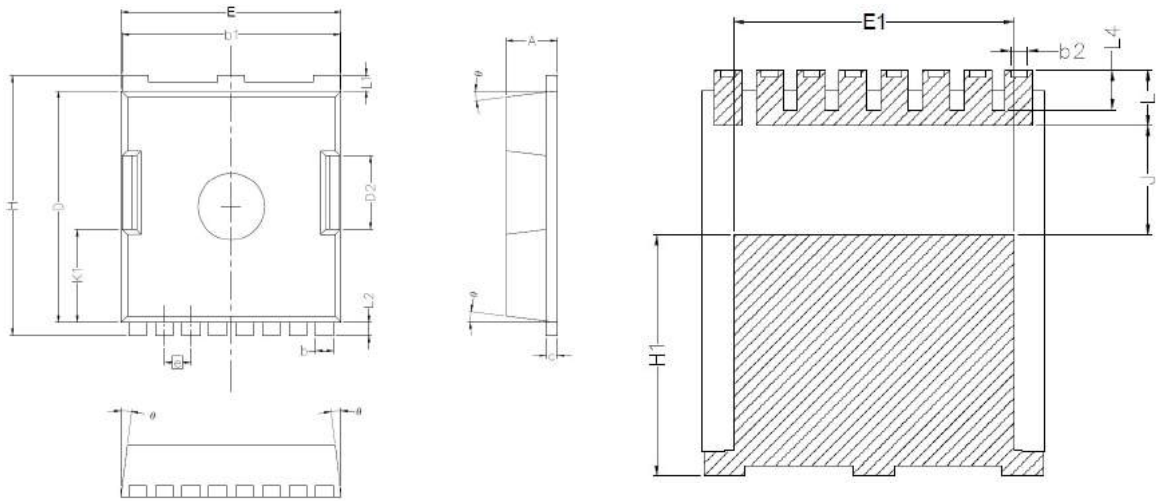
■ TYPICAL CHARACTERISTICS(Cont.)



■ TYPICAL CHARACTERISTICS(Cont.)



■ TOLL-8L PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	2.20	2.40
b	0.70	0.90
b1	9.70	9.90
b2	0.42	0.50
c	0.40	0.60
D	10.28	10.58
D2	3.10	3.50
E	9.70	10.10
E1	7.90	8.30
e	1.20BSC	
H	11.48	11.88
H1	6.75	7.15
N	8	
J	3.00	3.30
K1	3.98	4.38
L	1.40	1.80
L1	0.60	0.80
L2	0.50	0.70
L4	1.00	1.30
$\theta$	4°	10°

- The information contained hSurface-mounted package Advnced terch cell design Super trencherein is subject to change without notice.
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19th Floor, Shencheng Investment Center Building, Guiyuan Street, Luohu District, Shenzhen  
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Shenzhen Base:

Renmao Industrial Park, No. 2 Songgang Avenue, Bao'an District, Shenzhen

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