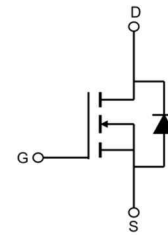
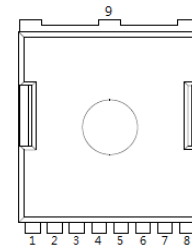


Features

- 60V,500A
 $R_{DS(ON)} < 0.70m\Omega @ V_{GS}=10V$ TYP:0.6m Ω
 $R_{DS(ON)} < 1.25m\Omega @ V_{GS}= 6V$ TYP:1.06 m Ω
- Surface-mounted package
- Super Trench
- MSL1
- Tj max 175°C



Schematic Diagram



TOLL-8L

1	Gate(G)
2,3,4,5,6,7,8	Source(S)
9	Drain(D)

Applications

- E-Tool appliances
- High power inverter system
- BMS appliances
- Inverter appliances

Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity (PCS)
G007N06T	APG007N067	TOLL-8L	-	-	2000

ABSOLUTE MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	60	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current (T _C =25°C) ^(2,3)	I _D	500	A
Continuous Drain Current (T _C =100°C) ^(2,3)	I _D	350	A
Pulsed Drain Current ^(1,2,3)	I _{DM}	1600	A
Single Pulsed Avalanche Energy (V _{DD} =50V,L=0.1mH) ⁽²⁾	E _{AS}	2738	mJ
Drain Power Dissipation	P _D	500	W
Thermal Resistance from Junction to Case ⁽²⁾	R _{θJC}	0.4	°C/W
Thermal Resistance- Junction to Ambient ⁽²⁾	R _{θJA}	40	°C/W
Junction Temperature	T _J	175	°C
Storage Temperature	T _{STG}	-55~ +175	°C

Notes:

1. Pulse width ≤ 300 μs, duty cycle ≤ 2 %
2. Surface Mounted on n 1 in2 pad area, t ≤ 10 sec.
3. Limited by bonding wire

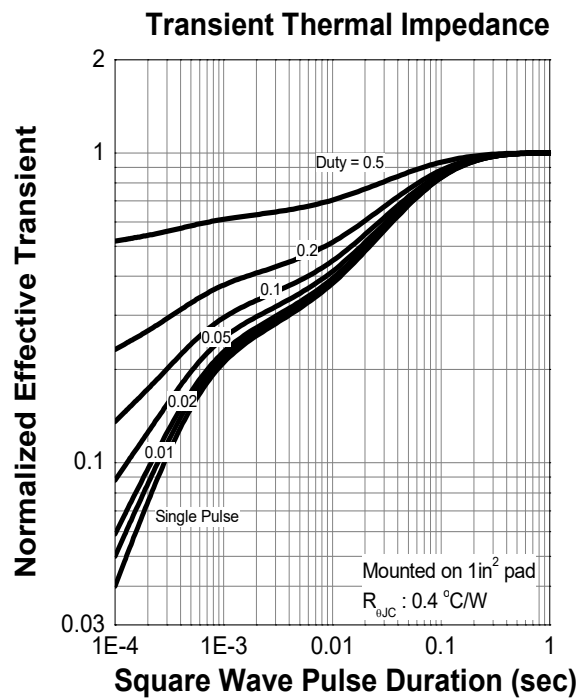
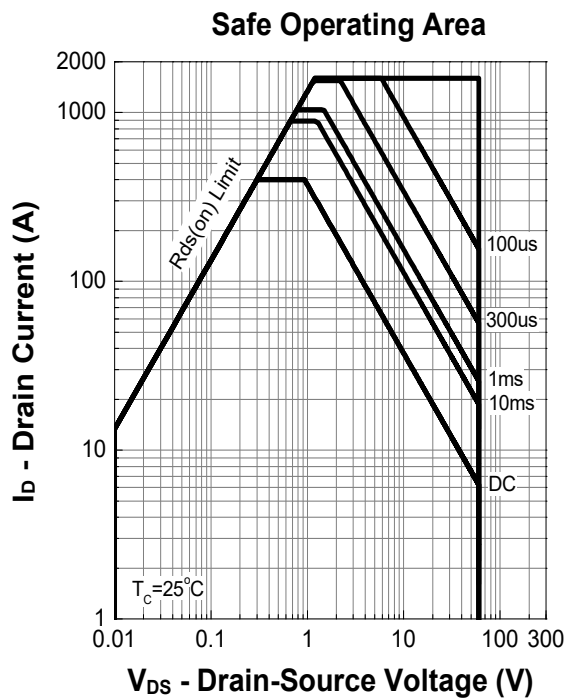
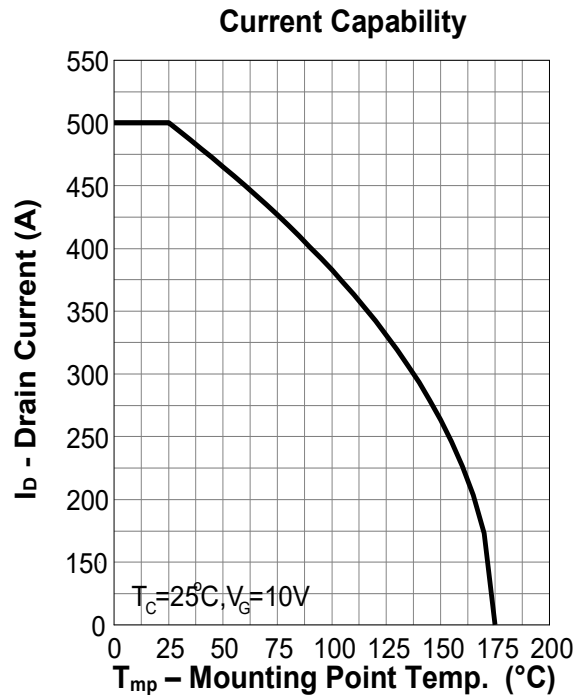
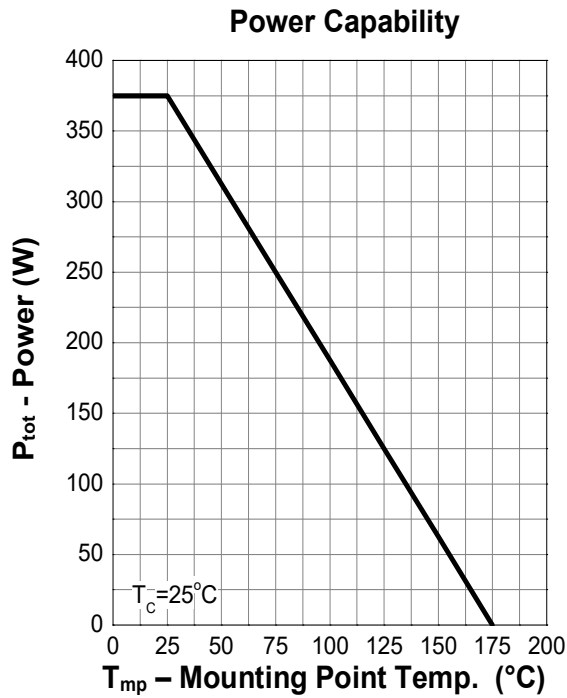
MOSFET ELECTRICAL CHARACTERISTICS(T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D =250μA	60	-	-	V
Zero gate voltage drain current	I _{DSS}	V _{DS} =60V, V _{GS} = 0V	-	-	1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V	-	-	±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2.0	-	4.0	V
Drain-source on-resistance ^(a)	R _{DS(on)}	V _{GS} =10V, I _D =20A	-	0.60	0.70	mΩ
		V _{GS} =6V, I _D =10A	-	1.06	1.25	mΩ
Dynamic characteristics						
Input Capacitance	C _{iss}	V _{DS} =30V, V _{GS} =0V, f =1.0MHz	-	17306	-	pF
Output Capacitance	C _{oss}		-	4764	-	
Reverse Transfer Capacitance	C _{rss}		-	2000	-	
Switching characteristics						
Turn-on delay time	t _{d(on)}	V _{DD} =30V, I _D =50A, R _G =4.5Ω, R _L =1.3Ω, V _G =10V	-	46	-	ns
Turn-on rise time	t _r		-	73	-	
Turn-off delay time	t _{d(off)}		-	161	-	
Turn-off fall time	t _f		-	88	-	
Total Gate Charge	Q _g	V _{DS} =30V, I _D =50A, V _{GS} =10V	-	274	-	nC
Gate-Source Charge	Q _{gs}		-	96	-	
Gate-Drain Charge	Q _{gd}		-	53	-	
Source-Drain Diode characteristics						
Diode Forward voltage ^(a)	V _{SD}	T _J =25°C, V _{GS} =0V, I _S =50A	-	-	1.3	V
Diode Forward current	I _S	T _C =25°C	-	-	500	A
Body Diode Reverse Recovery Time	t _{rr}	T _J =25°C, I _F =50A, di/dt=100A/us		115		ns
Body Diode Reverse Recovery Charge	Q _{rr}	T _J =25°C, I _F =50A, di/dt=100A/us		377		uc

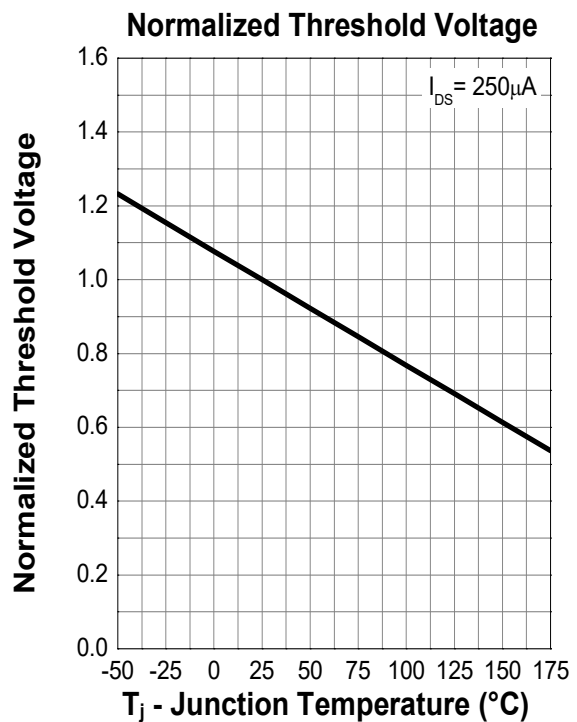
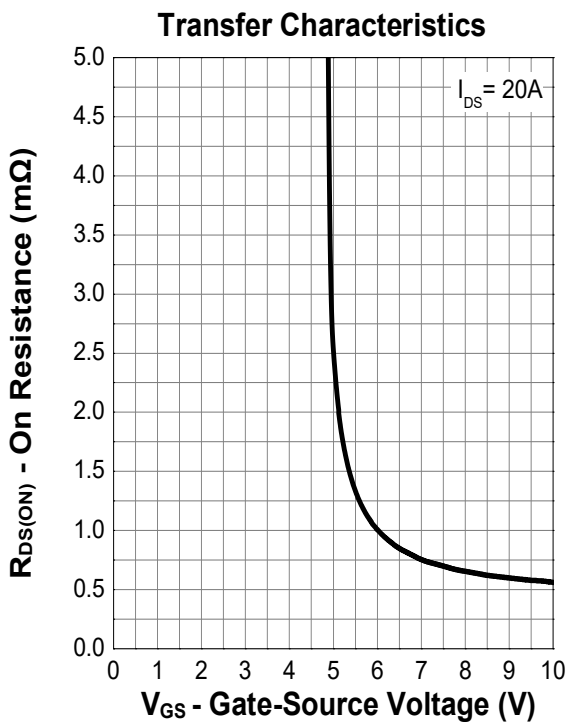
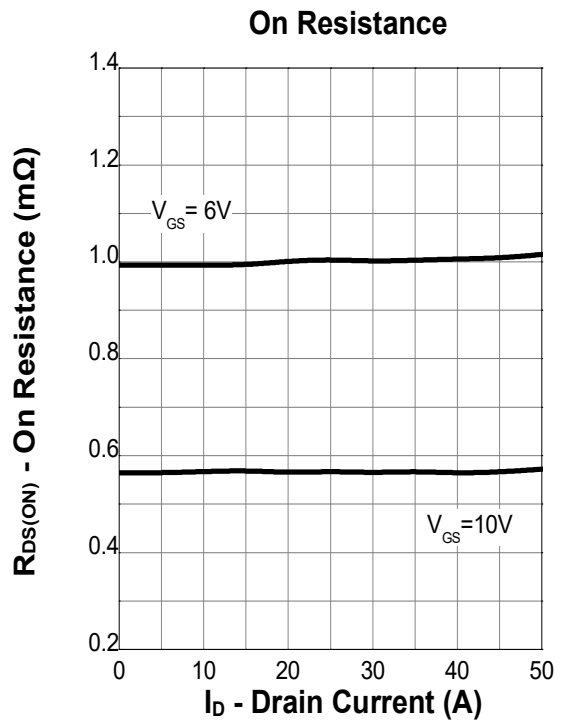
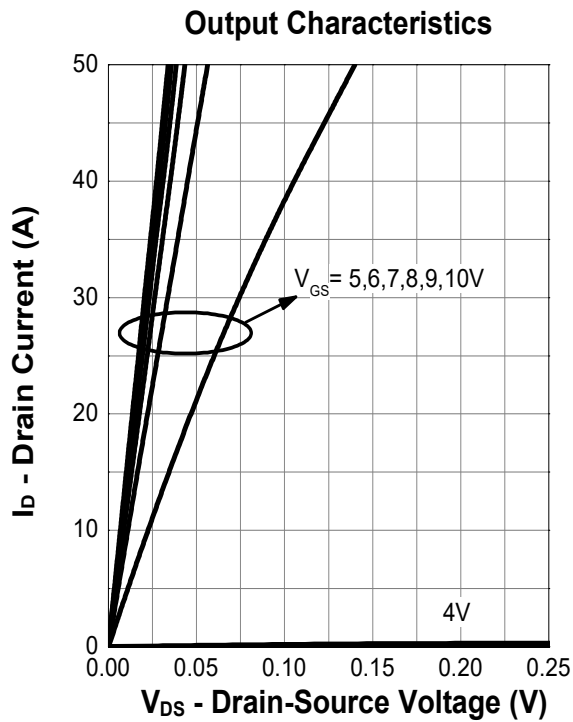
Notes:

- a) Pulse width ≤ 300 μs, duty cycle ≤ 2%
- b) Guaranteed by design, not subject to production testing

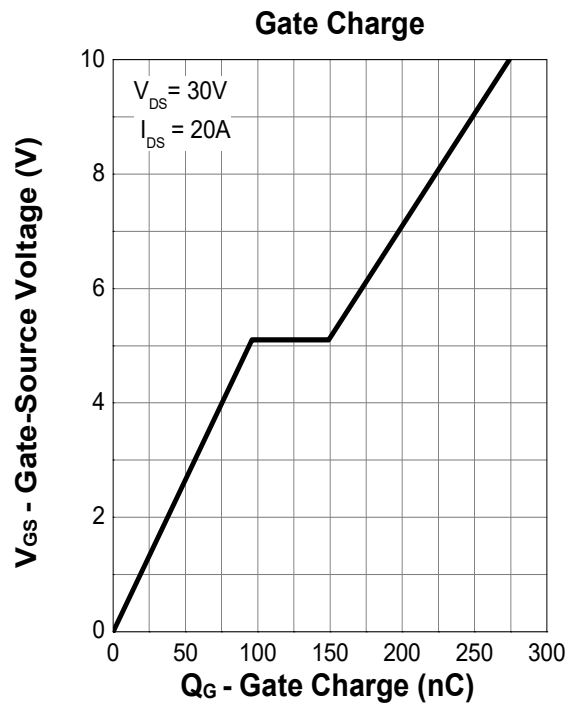
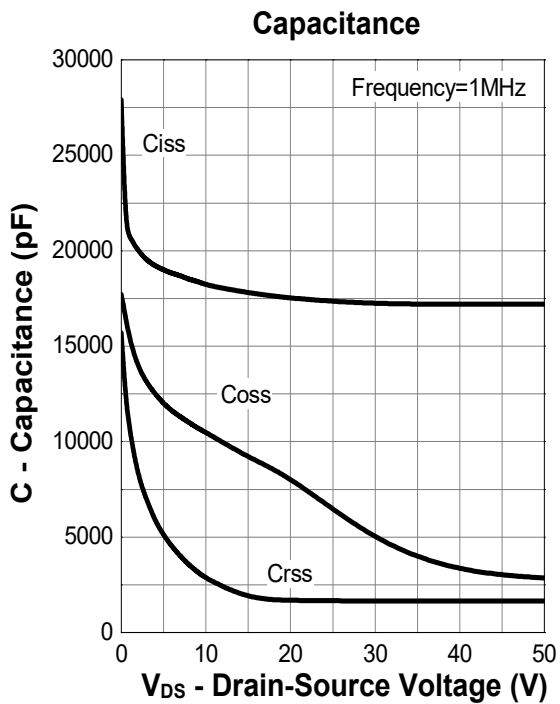
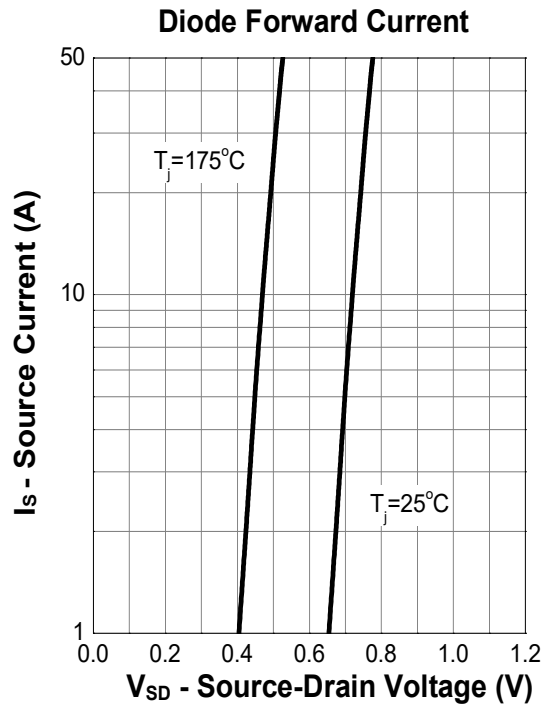
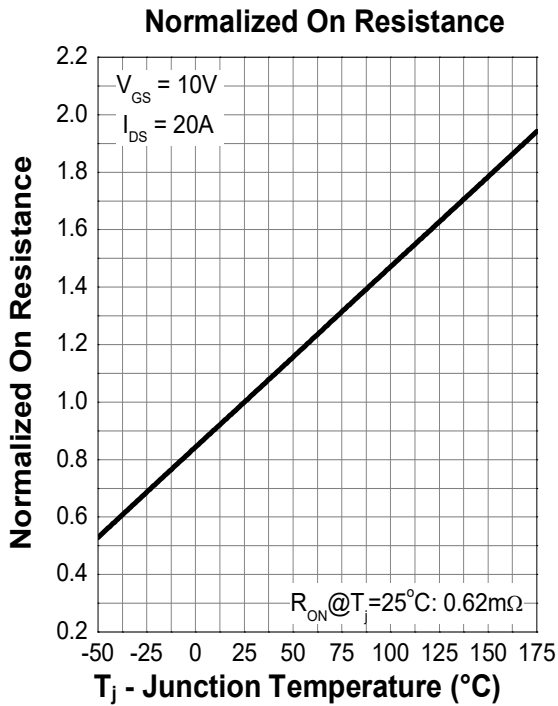
Typical Characteristics



Typical Characteristics

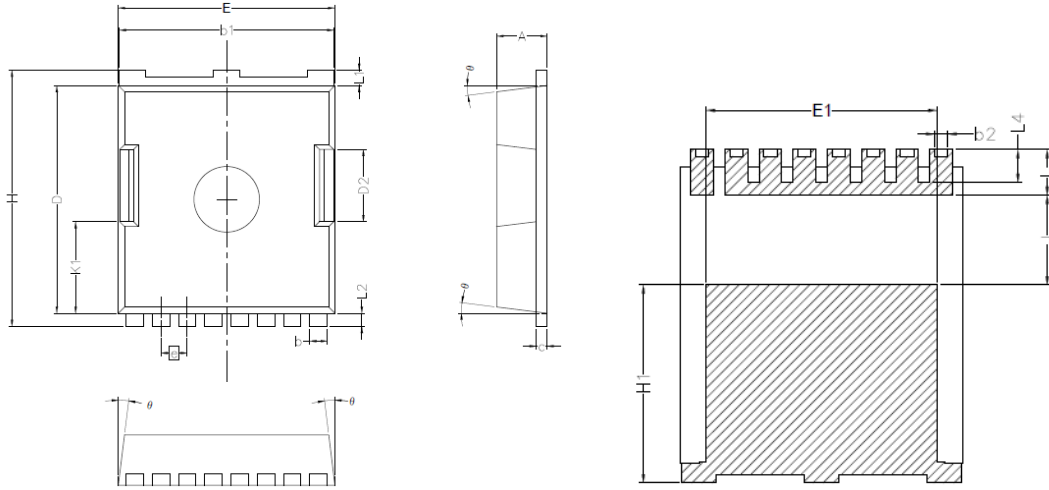


Typical Characteristics



Package Dimensions

TOLL-8L



Symbol	Dimensions In Millimeters	
	MIN.	MAX.
A	2.20	2.40
b	0.90	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
θ	4°	10°