

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	2.5mΩ@10V	246A

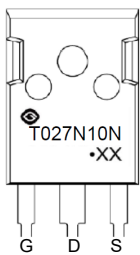
Feature

- Split Gate Trench Technology
- Low $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance
- 100% UIS Tested

Application

- Power Switching Application

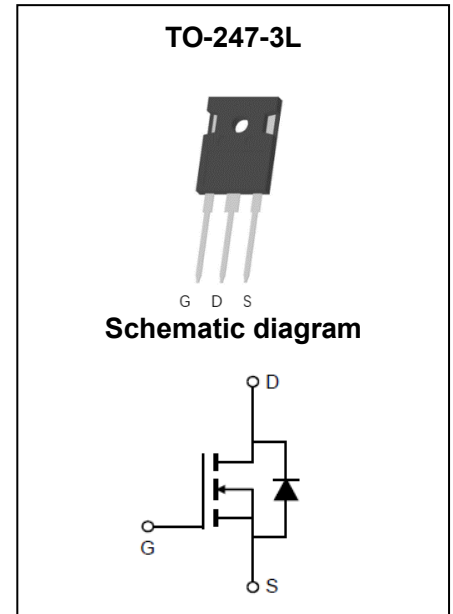
MARKING:



T027N10N = Device Code

XX = Date Code

Solid Dot = Green Indicator



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit	
Drain - Source Voltage	V_{DS}	100	V	
Gate - Source Voltage	V_{GS}	±20	V	
Continuous Drain Current ¹	$T_C = 25^\circ\text{C}$	I_D	246	A
	$T_C = 100^\circ\text{C}$	I_D	160	A
Pulsed Drain Current ²	I_{DM}	984	A	
Single Pulsed Avalanche Current ³	I_{AS}	70	A	
Single Pulsed Avalanche Energy ³	E_{AS}	1225	mJ	
Power Dissipation ⁵	$T_C = 25^\circ\text{C}$	P_D	379	W
Thermal Resistance from Junction to Ambient ⁶	$R_{\theta JA}$	59	$^\circ\text{C}/\text{W}$	
Thermal Resistance from Junction to Case	$R_{\theta JC}$	0.33	$^\circ\text{C}/\text{W}$	
Junction Temperature	T_J	150	$^\circ\text{C}$	
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$	

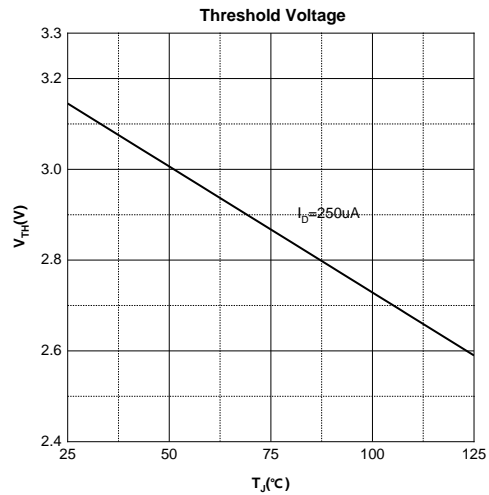
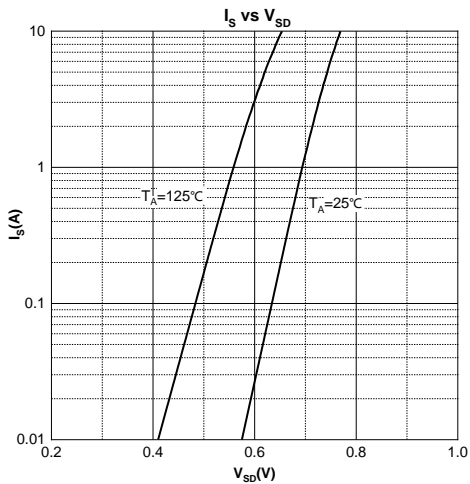
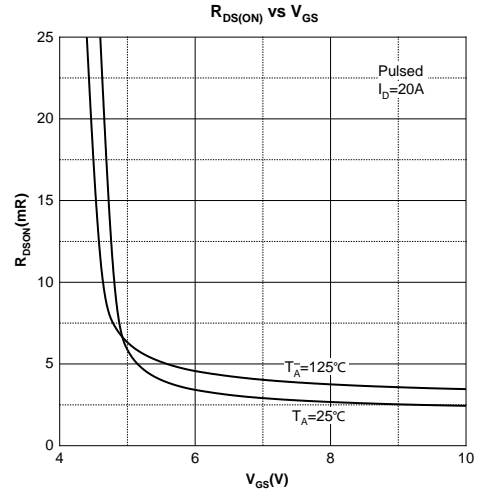
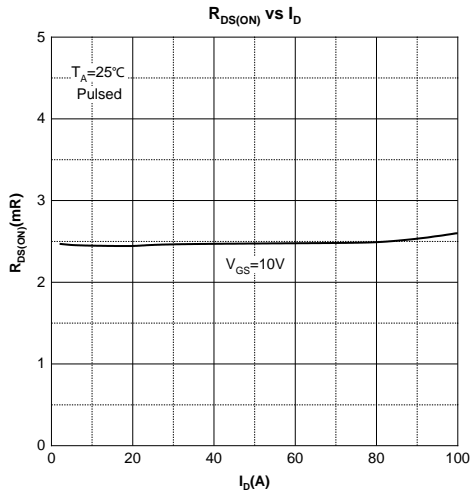
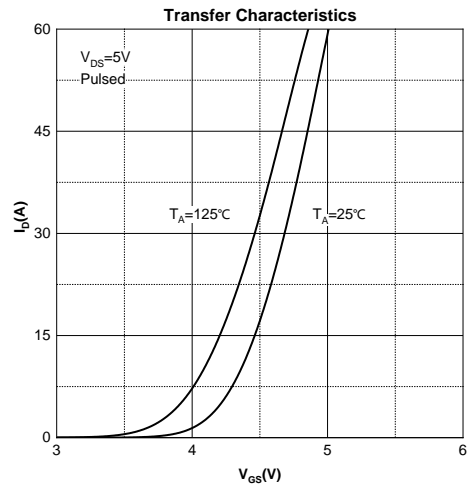
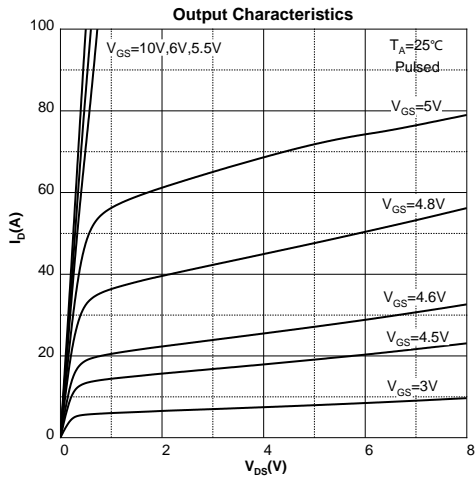
MOSFET ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

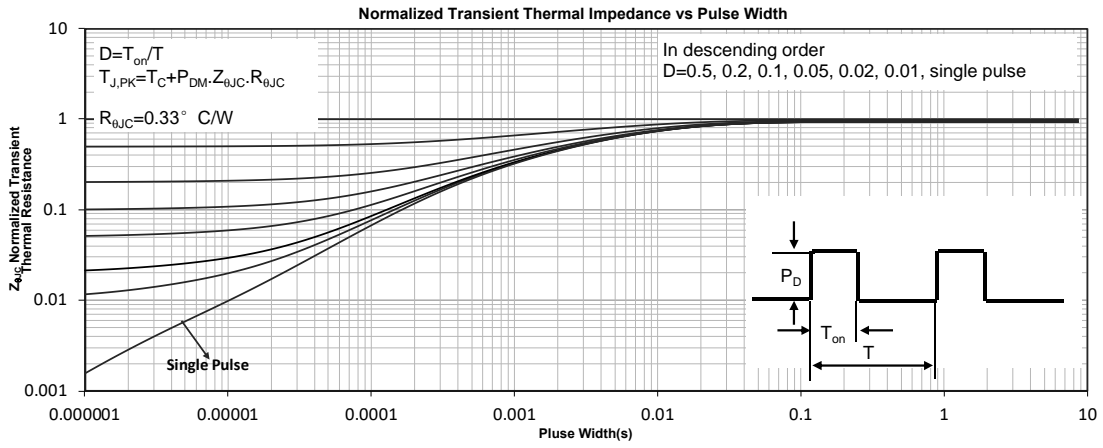
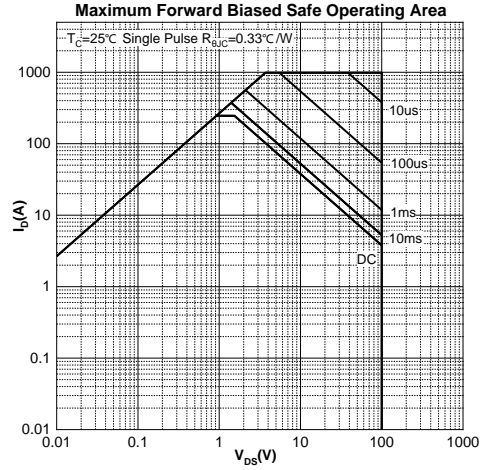
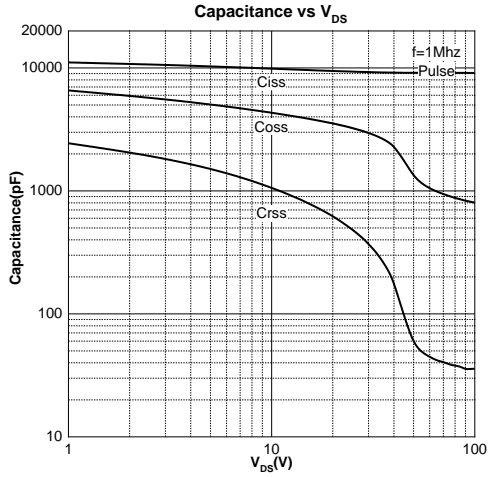
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	100			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 100V, V _{GS} = 0V			1	μA
Gate - Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
On Characteristics⁴						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2	3.1	4	V
Drain-source On-resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 20A		2.5	3.5	mΩ
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = 50V, V _{GS} = 0V, f = 0.1MHz		9018		pF
Output Capacitance	C _{oss}			1299		
Reverse Transfer Capacitance	C _{rss}			55		
Gate Resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f = 0.1MHz		2.3		Ω
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = 50V, V _{GS} = 10V, I _D = 20A		160		nC
Gate-source Charge	Q _{gs}			39		
Gate-drain Charge	Q _{gd}			50		
Turn-on Delay Time	t _{d(on)}	V _{DD} = 50V, V _{GS} = 10V, I _D = 20A, R _G = 3Ω		27		ns
Turn-on Rise Time	t _r			79		
Turn-off Delay Time	t _{d(off)}			110		
Turn-off Fall Time	t _f			86		
Source - Drain Diode Characteristics						
Diode Forward Voltage ⁴	V _{SD}	V _{GS} = 0V, I _S = 20A			1.2	V

Notes :

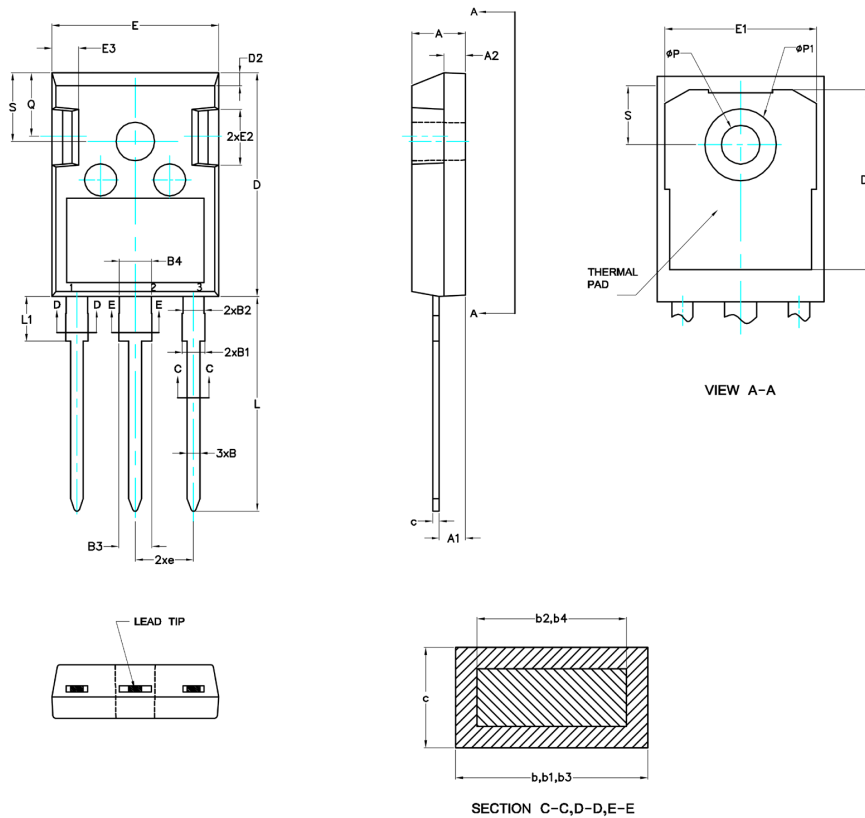
- 1.The maximum current rating is limited by package.And device mounted on a large heatsink
- 2.Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.
- 3.EAS condition: V_{DD} = 50V, V_{GS} = 10V, L = 0.5mH, R_G = 25Ω Starting T_J = 25°C.
- 4.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.
- 5.The power dissipation P_D is limited by T_{J(MAX)} = 150°C.And device mounted on a large heatsink
- 6.Device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C.

Typical Characteristics





TO-247-3L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.850	5.150	0.191	0.203
A1	2.250	2.550	0.089	0.100
A2	1.850	2.150	0.073	0.085
B	1.040	1.330	0.041	0.052
B1	1.900	2.350	0.075	0.093
B2	1.900	2.150	0.075	0.085
B3	2.900	3.350	0.114	0.132
B4	2.900	3.150	0.114	0.124
c	0.550	0.680	0.022	0.027
D	20.800	21.100	0.819	0.831
D1	16.250	17.650	0.640	0.695
D2	0.950	1.350	0.037	0.053
E	15.700	16.100	0.618	0.634
E1	13.500	14.200	0.531	0.559
E2	3.800	5.000	0.150	0.197
E3	1.000	2.600	0.039	0.102
e	5.460BSC		0.215BSC	
L	19.800	20.300	0.780	0.799
L1	4.000	4.500	0.157	0.177
ØP	3.500	3.700	0.138	0.146
ØP1	-	7.190	-	0.283
Q	5.400	6.000	0.213	0.236
S	6.200BSC		0.244BSC	