

Product Summary

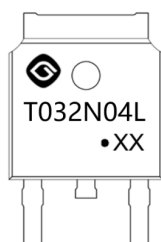
$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
40V	2.7m Ω @10V	100A
	3.7m Ω @10V	

Feature

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

Application

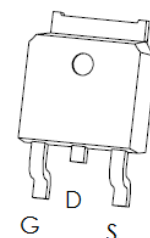
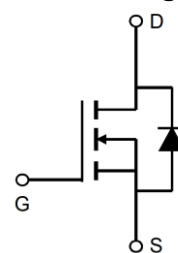
- Power Switching Application

MARKING:


T032N04L = Device Code

XX = Date Code

Solid Dot = Green Indicator

TO-252-2L

Schematic diagram

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

Parameter		Symbol	Value	Unit
Drain - Source Voltage		V_{DS}	40	V
Gate - Source Voltage		V_{GS}	± 20	V
Continuous Drain Current ¹	$T_C = 25^\circ\text{C}$	I_D	100	A
Pulsed Drain Current ²		I_{DM}	400	A
Single Pulsed Avalanche Current ³		I_{AS}	33	A
Single Pulsed Avalanche Energy ³		E_{AS}	272	mJ
Power Dissipation ⁵	$T_C = 25^\circ\text{C}$	P_D	250	W
Thermal Resistance from Junction to Ambient ⁶		$R_{\theta JA}$	50	$^\circ\text{C/W}$
Thermal Resistance from Junction to Case		$R_{\theta JC}$	1.25	$^\circ\text{C/W}$
Junction Temperature		T_J	150	$^\circ\text{C}$
Storage Temperature		T_{STG}	-55~ +150	$^\circ\text{C}$

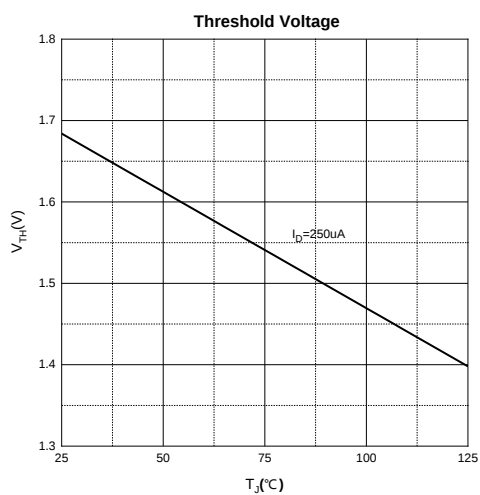
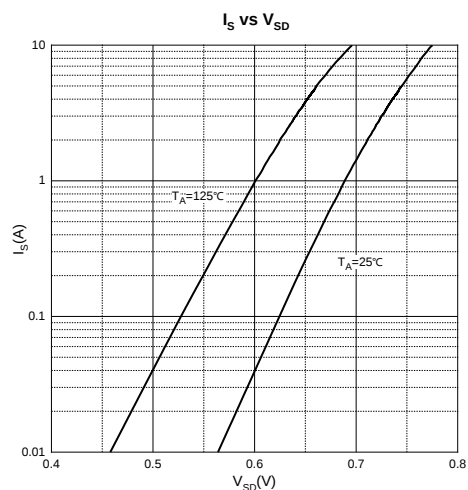
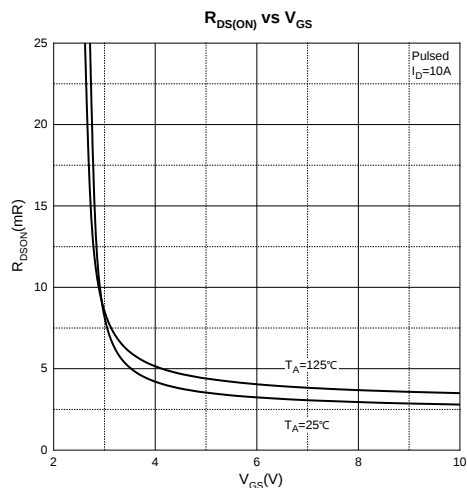
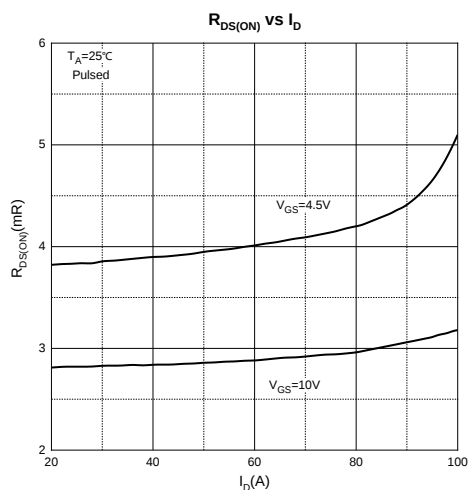
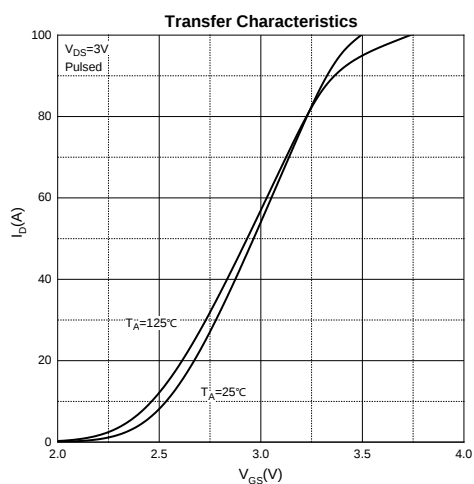
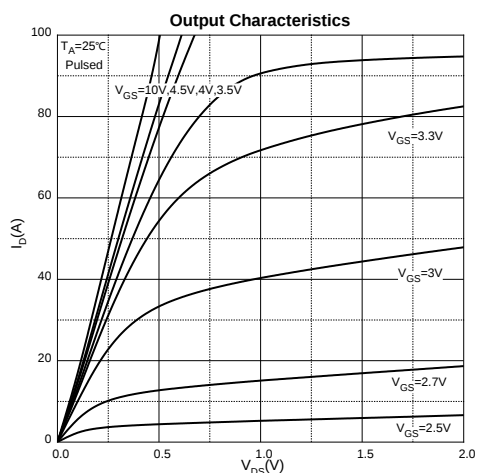
MOSFET ELECTRICAL CHARACTERISTICS (T_J = 25°C unless otherwise noted)

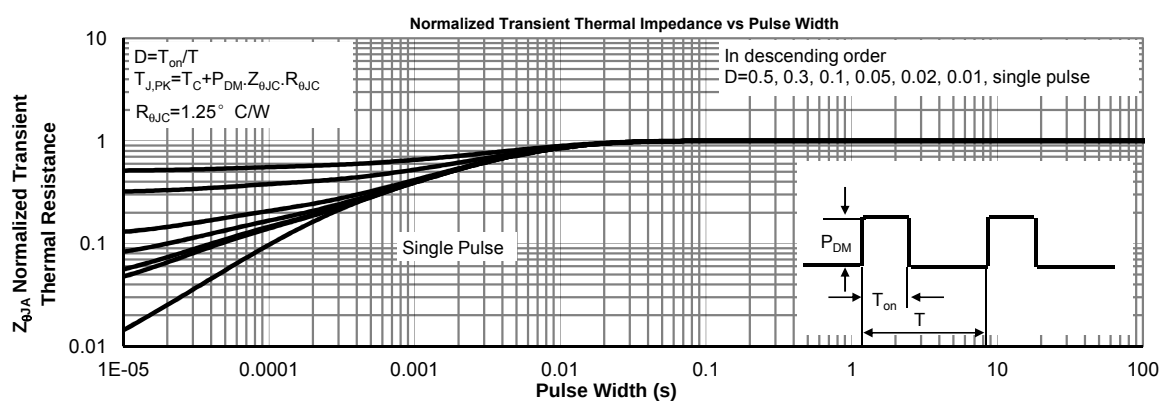
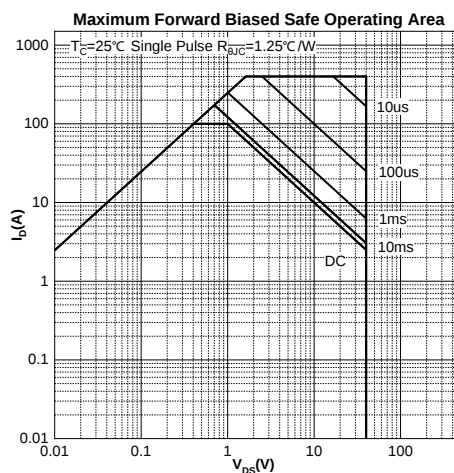
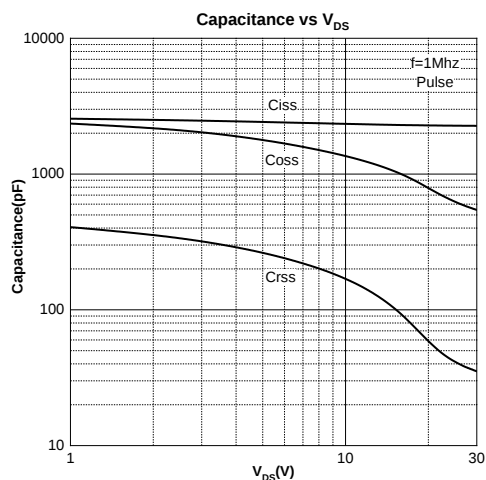
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	40			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 40V, V _{GS} = 0V			1	μA
Gate - Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
On Characteristics ⁴						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.0	1.6	3.0	V
Drain-source On-resistance	R _{DS(on)}	V _{GS} = 10V, I _D =10A		2.7	4.0	mΩ
		V _{GS} = 4.5V, I _D =10A		3.7	5.5	
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = 20V, V _{GS} = 0V, f = 1MHz		2281		pF
Output Capacitance	C _{oss}			788		
Reverse Transfer Capacitance	C _{rss}			59		
Gate Resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz		3.7		Ω
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} =20V, V _{GS} = 10V, I _D = 10A		37.5		nC
Gate-source Charge	Q _{gs}			5.7		
Gate-drain Charge	Q _{gd}			6.5		
Turn-on Delay Time	t _{d(on)}	V _{DD} =20V, V _{GS} = 10V, I _D =30A R _G = 3Ω		10		ns
Turn-on Rise Time	t _r			30		
Turn-off Delay Time	t _{d(off)}			60		
Turn-off Fall Time	t _f			15		
Source - Drain Diode Characteristics						
Diode Forward Voltage ⁴	V _{SD}	V _{GS} = 0V, I _S =10A			1.2	V

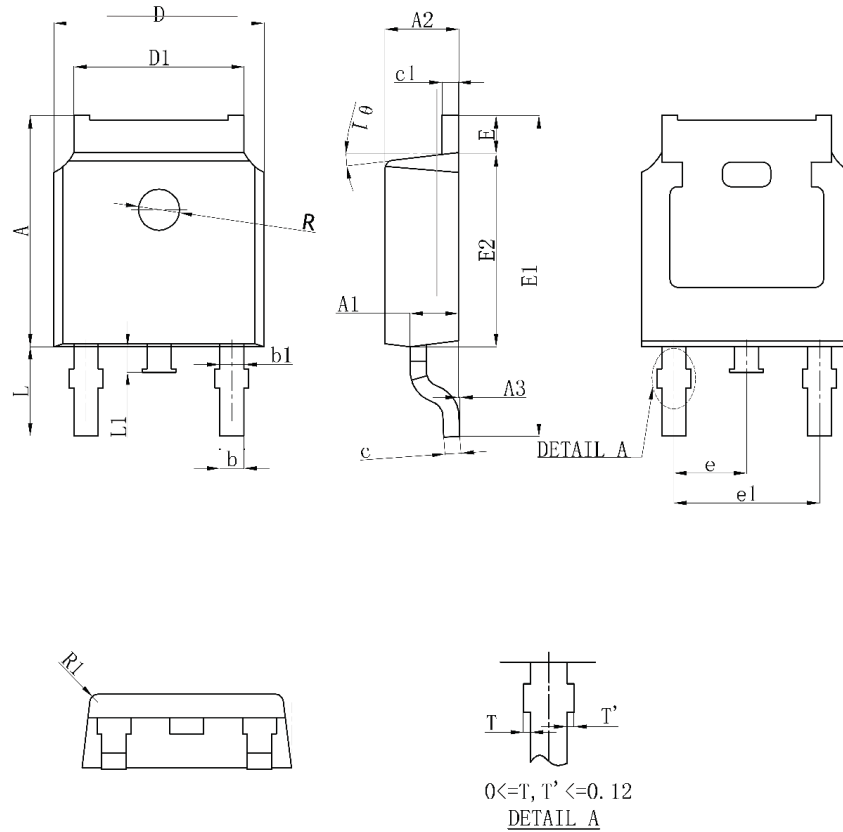
Notes :

- 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} = 20V, 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-252-2L Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	7.050	7.150	0.278	0.281
A1	0.960	1.060	0.038	0.042
A2	2.200	2.400	0.087	0.094
A3	0.000	0.100	0.000	0.004
b	0.760REF		0.030REF	
b1	1.000REF		0.039REF	
c	0.508REF		0.020REF	
c1	0.508REF		0.020REF	
D	6.550	6.650	0.258	0.262
D1	5.100	5.460	0.201	0.215
E	0.950	1.050	0.037	0.041
E1	9.700	10.400	0.382	0.409
E2	6.000	6.200	0.236	0.244
e	2.286BSC		0.090BSC	
e1	4.572REF		0.180REF	
L	2.650	2.950	0.104	0.116
L1	0.700	0.900	0.028	0.035
θ	7°REF		7°REF	
R	1.300REF		0.051REF	
R1	0.250REF		0.010REF	