

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	2.6mΩ@10V	260A

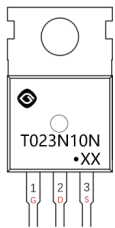
Feature

- Split Gate Trench Technology
- Low RDS(ON)
- Low Gate Charge
- Low Gate Resistance
- 100%UIS Tested

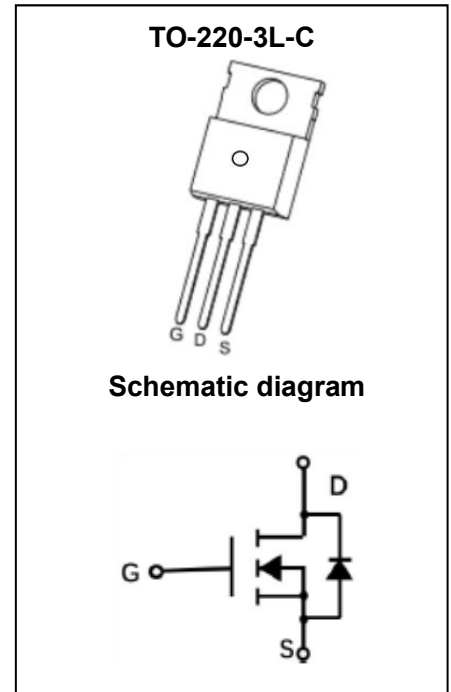
Application

- Power Switching Application

MARKING:



T023N10N = 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 ^{1,5}	I_D	$T_A = 25^\circ\text{C}$	260
		$T_A = 100^\circ\text{C}$	169
Pulsed Drain Current ²	I_{DM}	1040	A
Single Pulsed Avalanche Current	I_{AS}	77	A
Single Pulsed Avalanche Energy	E_{AS}	1482	mJ
Power Dissipation ^{4,5}	P_D	416	W
Thermal Resistance from Junction to Ambient ⁵	$R_{\theta JC}$	0.3	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55~ +150	°C

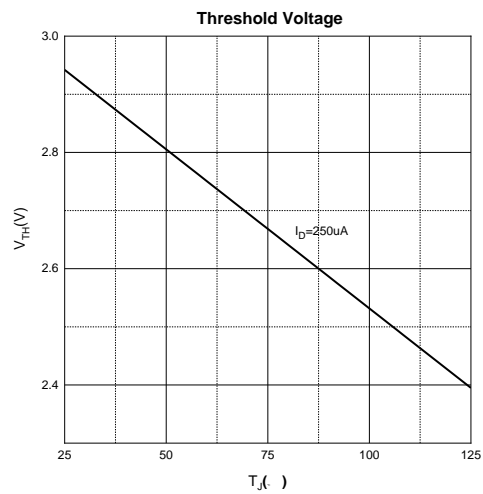
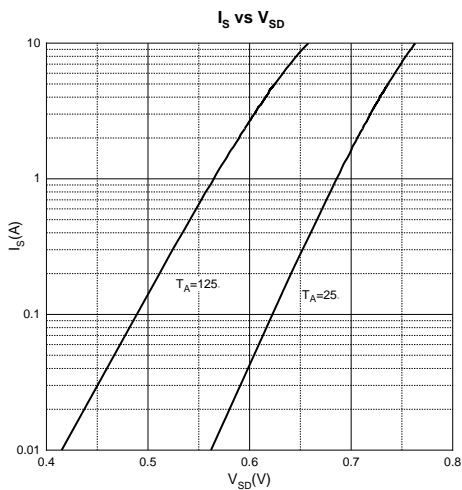
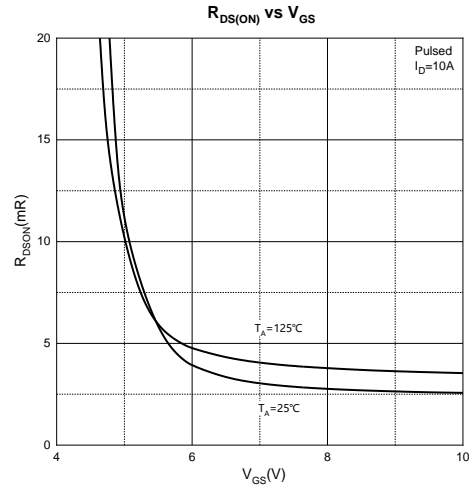
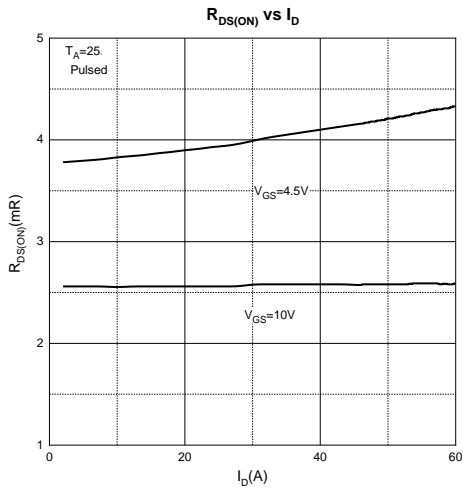
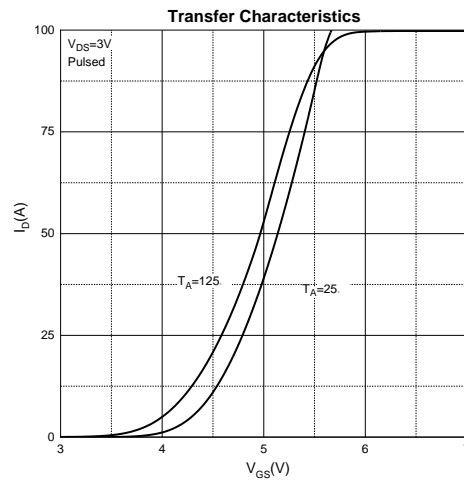
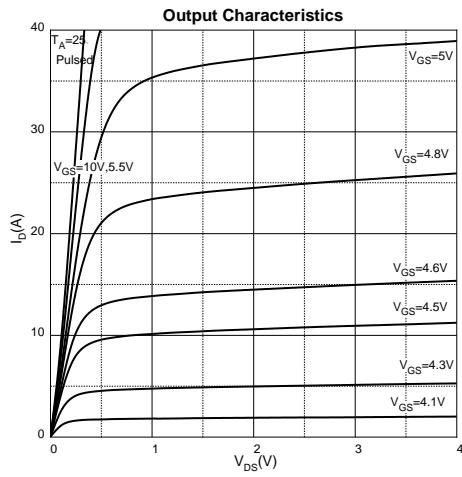
MOSFET ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

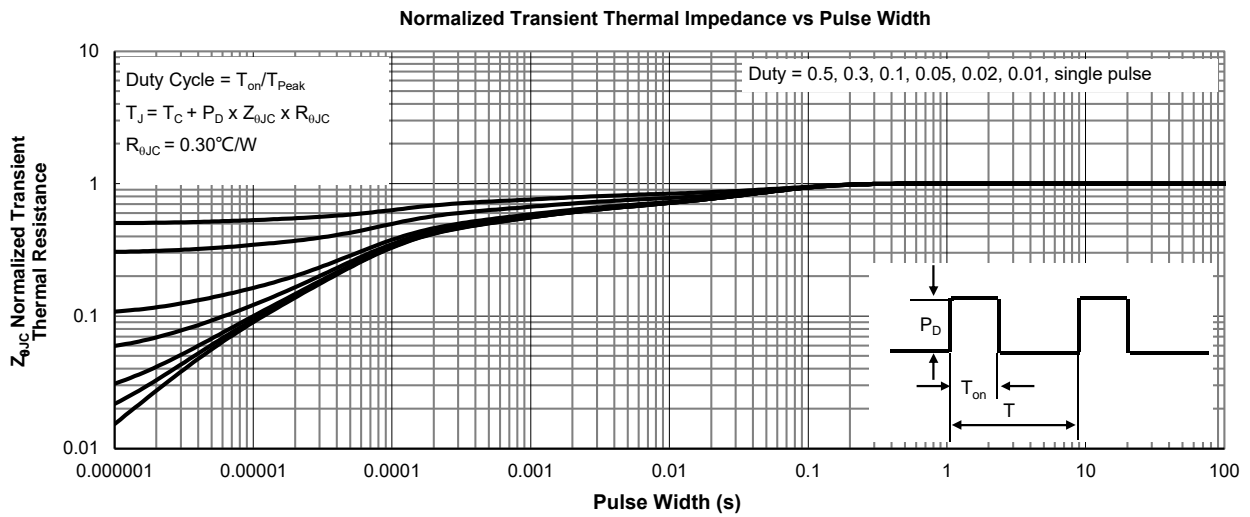
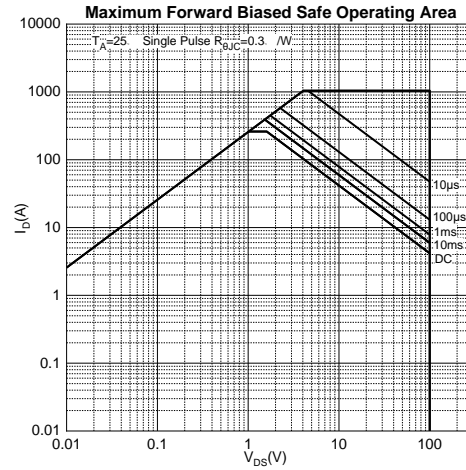
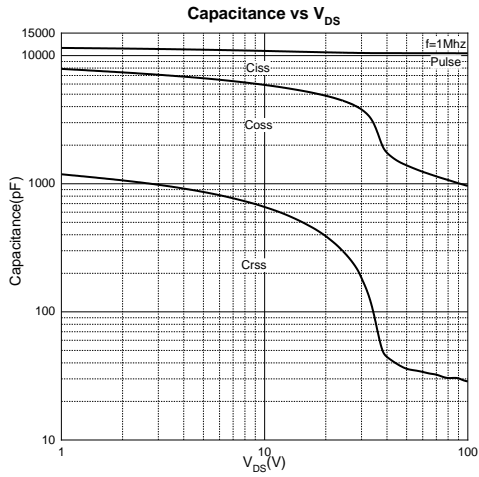
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	100			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 100V, V _{GS} = 0V			1	μA
Gate - Body Leakage Current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
On Characteristics³						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	2	3	4	V
Drain-source On-resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 20A		2.6	3	mΩ
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = 50V, V _{GS} = 0V, f = 0.1MHz		10531		pF
Output Capacitance	C _{oss}			1395		
Reverse Transfer Capacitance	C _{rss}			37		
Gate Resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz		3		Ω
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = 50V, V _{GS} = 10V, I _D = 20A		54		nC
Gate-source Charge	Q _{gs}			6.9		
Gate-drain Charge	Q _{gd}			11.3		
Turn-on Delay Time	t _{d(on)}	V _{DD} = 50V, V _{GS} = 10V, R _L = 2.5Ω, R _G = 3Ω		40		ns
Turn-on Rise Time	t _r			60		
Turn-off Delay Time	t _{d(off)}			130		
Turn-off Fall Time	t _f			75		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V _{SD}	V _{GS} = 0V, I _S = 20A			1.2	V

Notes :

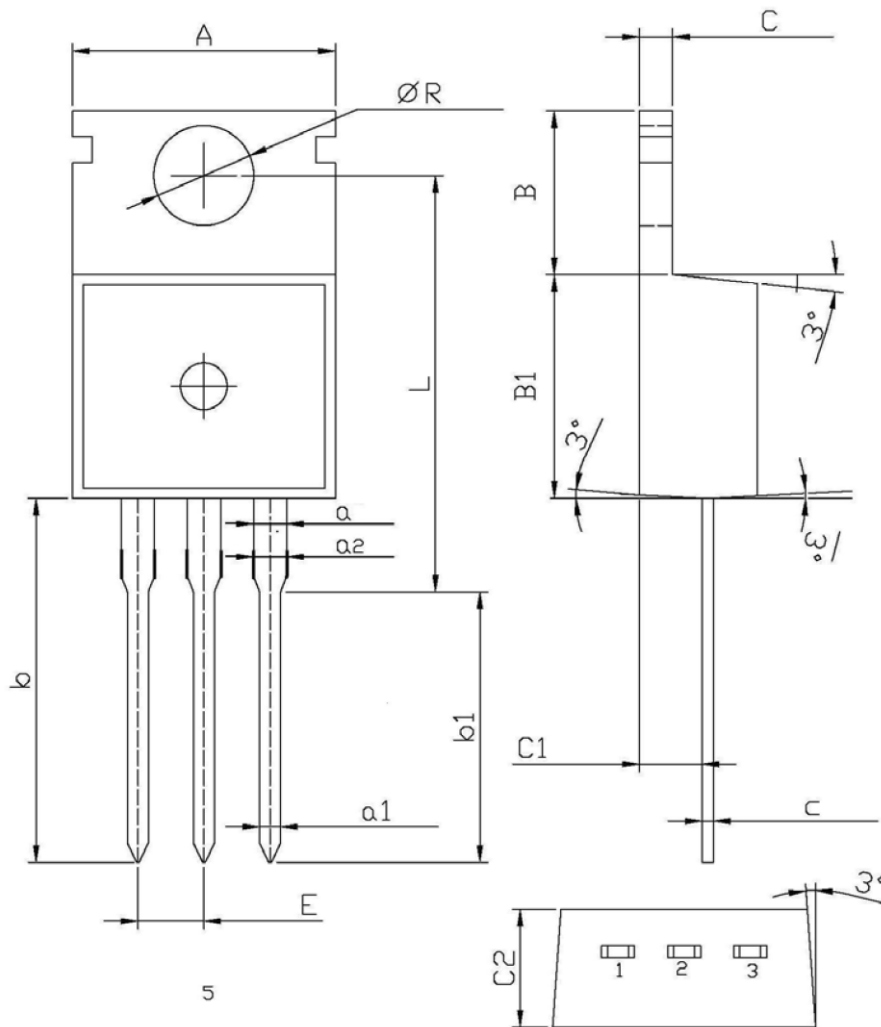
- 1.The maximum current rating is limited by package.And device mounted on a large heatsink
- 2.Pulse Test : Pulse Width ≤ 10μs, duty cycle ≤ 1%.
- 3.E_{AS} condition: V_{DD} = 50V, V_{GS} = 10V, L = 0.5mH, R_G = 25Ω Starting T_J = 25°C.
- 4.Pulse Test : Pulse Width ≤ 300μs, duty cycle ≤ 2%.
- 5.The 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-220-3L-C Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	9.800	10.200	0.386	0.402
R	3.560	3.640	0.140	0.143
L	15.700	16.100	0.618	0.634
b	12.600	13.600	0.496	0.535
b1	9.600	10.600	0.378	0.417
a	1.220	1.320	0.048	0.052
E	2.340	2.740	0.092	0.108
a2	1.250	1.450	0.049	0.057
C	1.200	1.400	0.047	0.055
B	6.300	6.700	0.248	0.264
B1	9.000	9.400	0.354	0.370
C1	2.200	2.600	0.087	0.102
a1	0.700	0.900	0.028	0.035
c	0.400	0.600	0.016	0.024
C2	4.300	4.700	0.169	0.185