

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
60V	9mΩ@10V	80A
	13mΩ@4.5V	

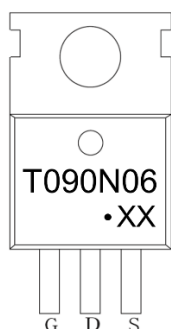
Feature

- Split Gate Trench MOSFET Technology
- High Speed Power Switching, Logic Level
- Enhanced Body diode dv/dt Capability
- Enhanced Avalanche Ruggedness

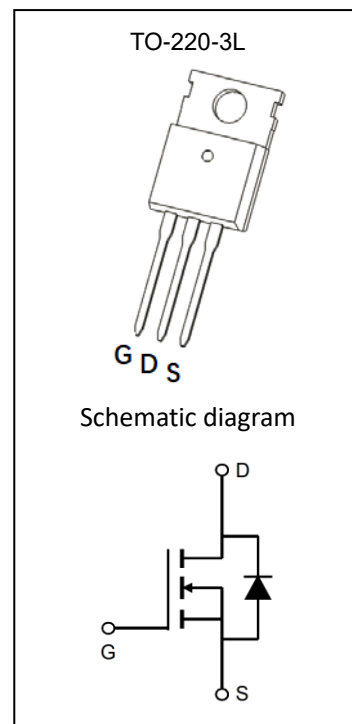
Application

- Power switching application
- Load switching

MARKING:



T090N06 = Device Code
 Solid Dot = Green Device
 XX = Date Code



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

Parameter	Symbol	Value	Unit
Continuous Drain Current	I_D	80	A
Drain to Source Voltage	V_{DS}	60	V
Gate to Source Voltage	V_{GS}	±20	V
Pulsed Drain Current	I_{DM}	240	A
Avalanche Energy, Single Pulse*	E_{AS}	73	mJ
	L=0.3mH		
Power Dissipation	P_D	56	W
Thermal Resistance Junction-Ambient	$R_{\theta JA}$	62.5	$^{\circ}C/W$
Operating and Storage Temperature	T_J, T_{stg}	-55 ~ 150	$^{\circ}C$

* E_{AS} test condition $V_{DD}=25V, V_{GS}=10V, L=0.3mH, I_{AS}=22A$

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 ¹	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1.0	1.7	2.5	V
Drain-source on-resistance ¹	R _{DS(on)}	V _{GS} =10V, I _D =20A		7.0	9.0	mΩ
		V _{GS} =4.5V, I _D =20A		8.5	13.0	mΩ
Forward tranconductance ¹	g _{FS}	V _{DS} =5V, I _D =20A		32		S
Gate Resistance	R _G	V _{GS} =0V, V _{DS} Open, f=1MHz		1.2		Ω
Dynamic characteristics²						
Input Capacitance	C _{iss}	V _{DS} =30V, V _{GS} =0V, f =1MHz		1990		pF
Output Capacitance	C _{oss}			470		
Reverse Transfer Capacitance	C _{rss}			14		
Total gate charge(10V)	Q _g	V _{DS} =30V, I _D =20A, V _{GS} =10V		31		nC
Gate-source charge	Q _{gs}			6		
Gate-drain charge	Q _{gd}			5		
Turn-on delay time	t _{d(on)}	V _{DD} =30V, R _L =1Ω V _{GS} =10V, R _G =3Ω		10		ns
Turn-on rise time	t _r			5		
Turn-off delay time	t _{d(off)}			30		
Turn-off fall time	t _f			8		
Source-Drain Diode characteristics						
Body Diode Voltage	V _{DS}	I _{SD} =20A, V _{GS} = 0V		0.85	1.2	V

Notes:

1. Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.
2. Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristics

Fig 1: Output Characteristics

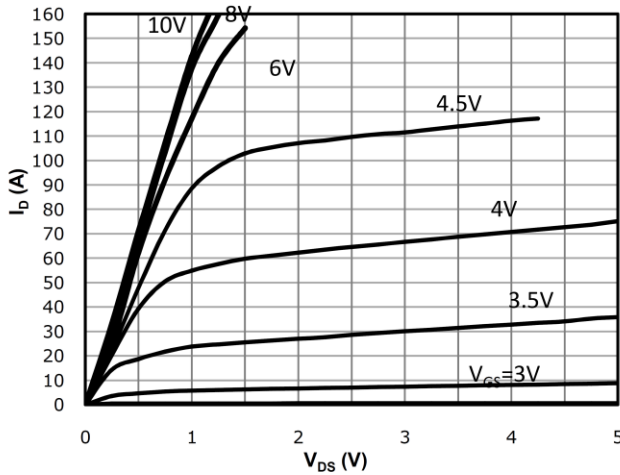


Fig 2: Transfer Characteristics

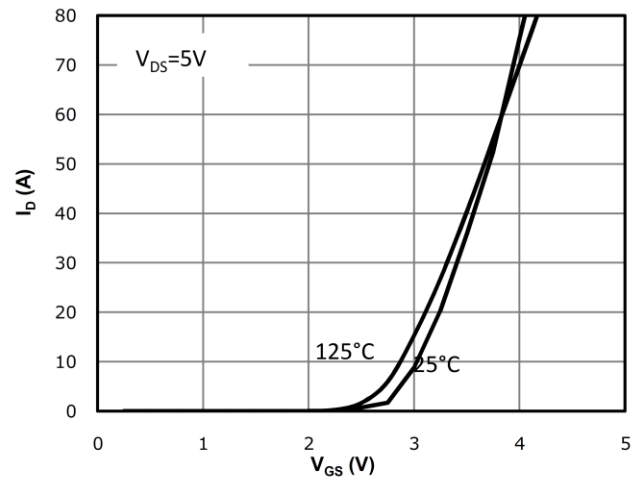


Fig 3: $R_{DS(on)}$ vs Drain Current and Gate Voltage

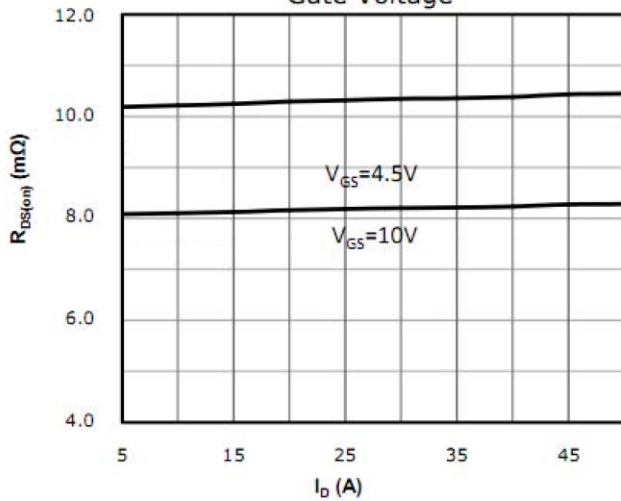


Fig 4: $R_{DS(on)}$ vs Gate Voltage

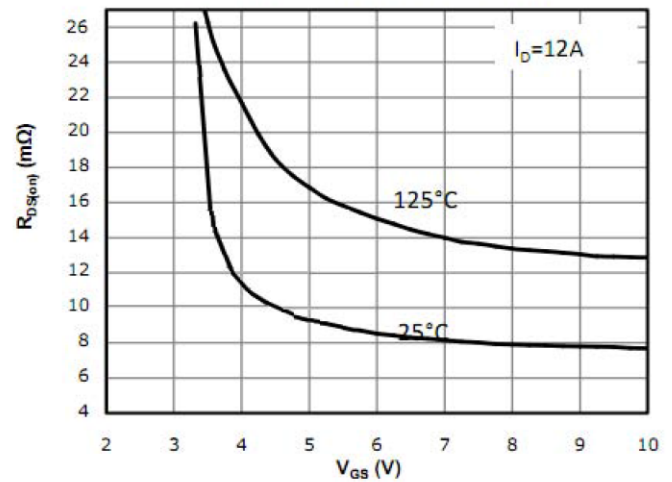


Fig 5: $R_{DS(on)}$ vs. Temperature

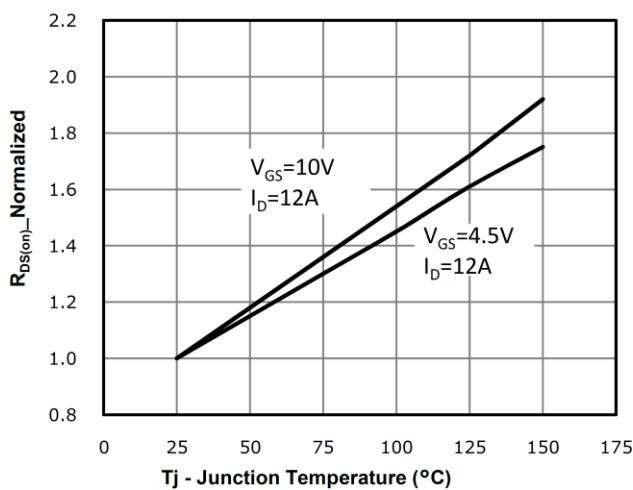


Fig 6: Capacitance Characteristics

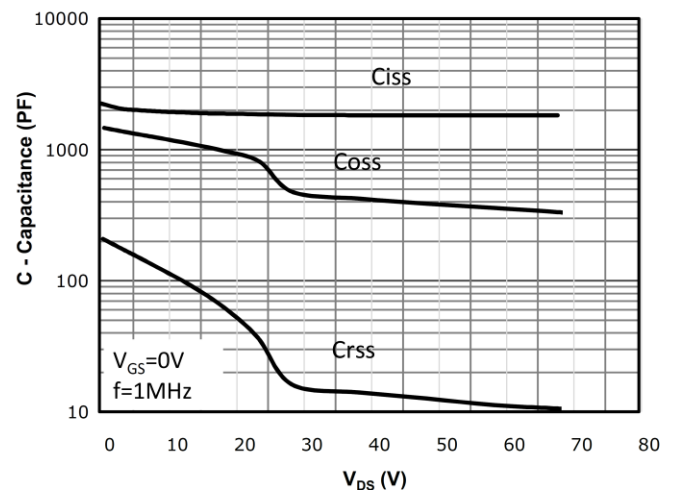


Fig 7: Gate Charge Characteristics

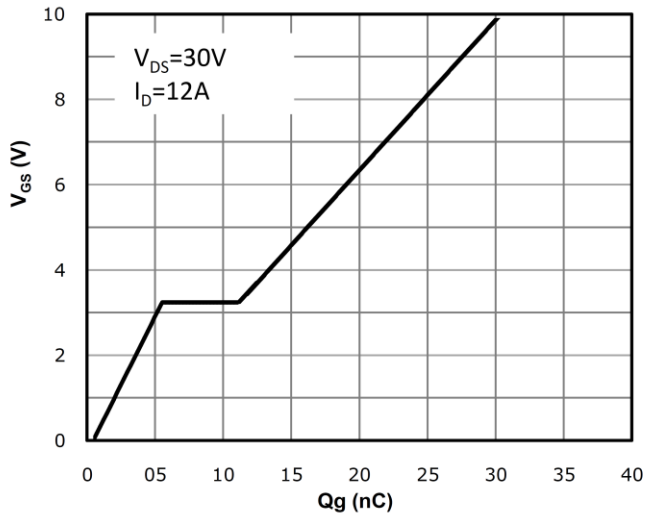
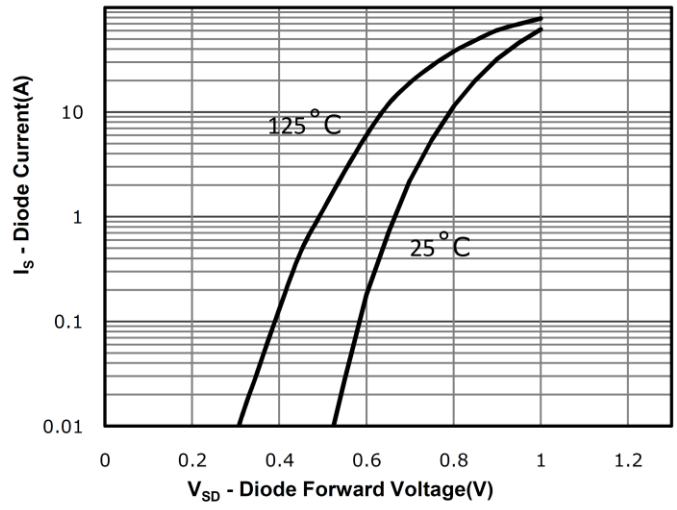
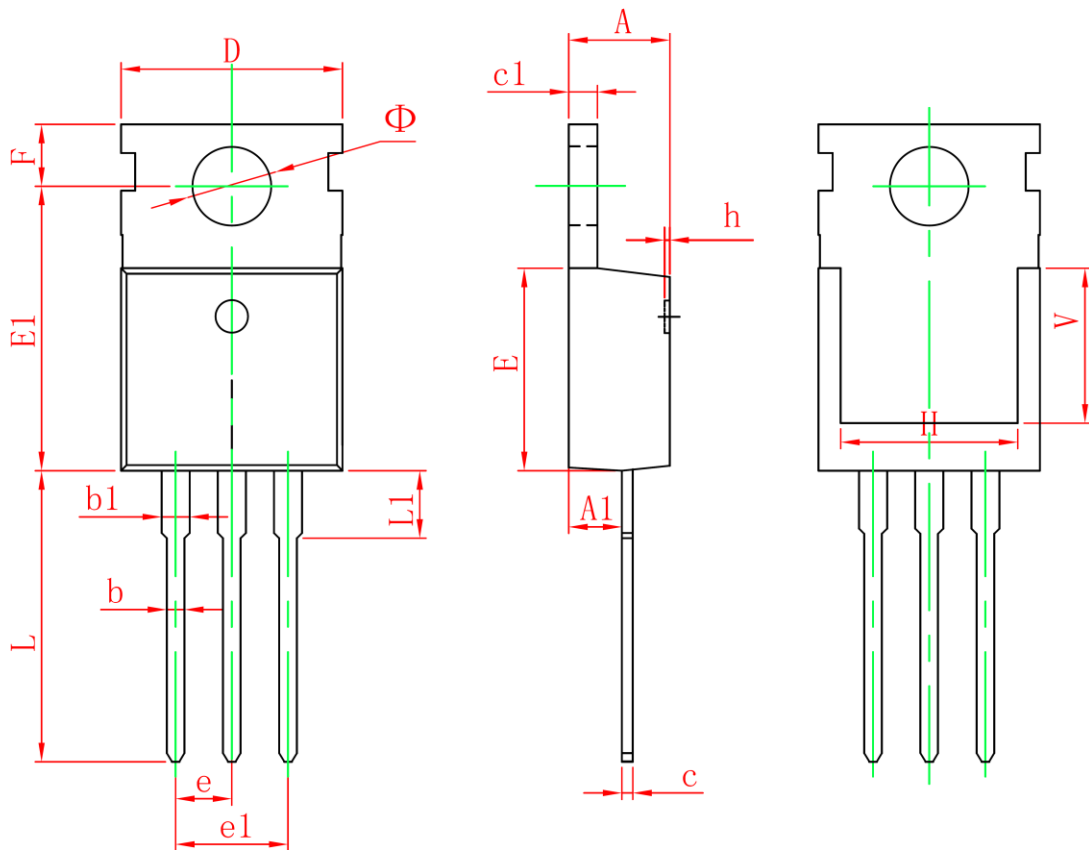


Fig 8: Body-diode Forward Characteristics



TO-220-3L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.400	4.600	0.173	0.181
A1	2.250	2.550	0.089	0.100
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.330	0.650	0.013	0.026
c1	1.200	1.400	0.047	0.055
D	9.910	10.250	0.390	0.404
E	8.950	9.750	0.352	0.384
E1	12.650	12.950	0.498	0.510
e	2.540 TYP.		0.100 TYP.	
e1	4.980	5.180	0.196	0.204
F	2.650	2.950	0.104	0.116
H	7.900	8.100	0.311	0.319
h	0.000	0.300	0.000	0.012
L	12.900	13.400	0.508	0.528
L1	2.850	3.250	0.112	0.128
V	7.500 REF.		0.295 REF.	
Φ	3.400	3.800	0.134	0.150

单击下面可查看定价，库存，交付和生命周期等信息

[>>GP\(格瑞宝\)](#)