

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
100V	35mΩ@10V	35A

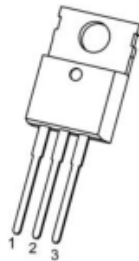
Feature

- Fast Switching
- Low Gate Charge and Rdson
- 100% Single Pulse avalanche energy Test

Applications

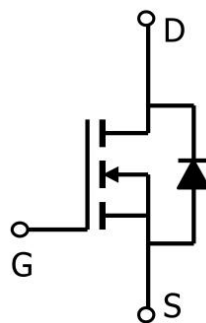
- DC-DC Converter
- Ideal for high-frequency switching and synchronous rectification

Package

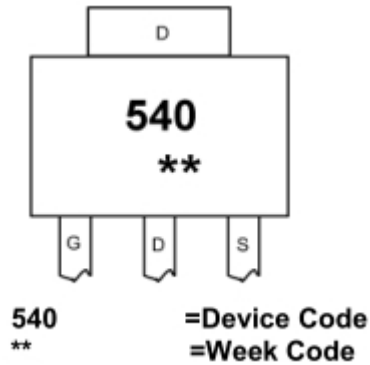


TO-220-3L-C(G:1 D:2 S:3)

Circuit diagram



Marking



Absolute maximum ratings

(T_a=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	100	V
Gate-Source Voltage	V _{GS}	±25	V
Continuous Drain Current ¹ (T _C =25°C)	I _D	35	A
Pulsed Drain Current ²	I _{DM}	100	A
Single Pulse Avalanche Energy ³	E _{AS}	30	mJ
Total Power Dissipation(T _C =25°C)	P _D	130	W
Thermal Resistance Junction-Case ¹	R _{θJC}	0.96	°C/W
Storage Temperature Range	T _{STG}	-55 to 150	°C
Operating Junction Temperature Range	T _J	-55 to 150	°C

Electrical characteristics

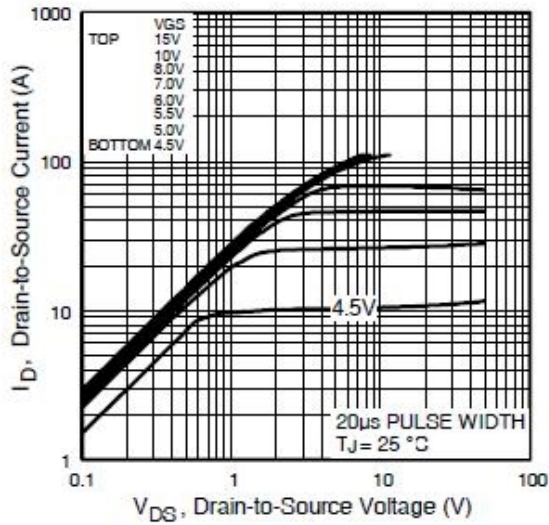
($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$BV_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	100			V
Bvdss Temperature Coefficient	$\Delta BV_{DSS}/\Delta T$	$I_D=1mA$, Reference $25^{\circ}C$		0.12		V/ $^{\circ}C$
Drain-Source Leakage Current	I_{DSS}	$V_{DS} = 80V, V_{GS} = 0V$, $T_J=25^{\circ}C$			25	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = \pm 25V, V_{DS} = 0V$			± 100	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2	3	4	V
Static Drain-Source on-Resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 16A$		35	45	m Ω
Dynamic Characteristics						
Input capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V$, $f=1MHz$		1966		pF
Output capacitance	C_{oss}			257		
Reverse transfer capacitance	C_{rss}			41		
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS}=80V, V_{GS}=10V$, $I_D = 16A$		70		pF
Gate-Source Charge	Q_{gs}			15		
Gate-Drain Charge	Q_{gd}			22		
Turn-on Delay Time	$T_{d(on)}$	$V_{DD}=50V, V_{GS}=10V$, $R_G = 5.1\Omega, I_D = 16A$		11		nS
Turn-on Rise Time	T_r			35		
Turn-Off Delay Time	$T_{d(off)}$			39		
Turn-Off Fall Time	t_f			35		

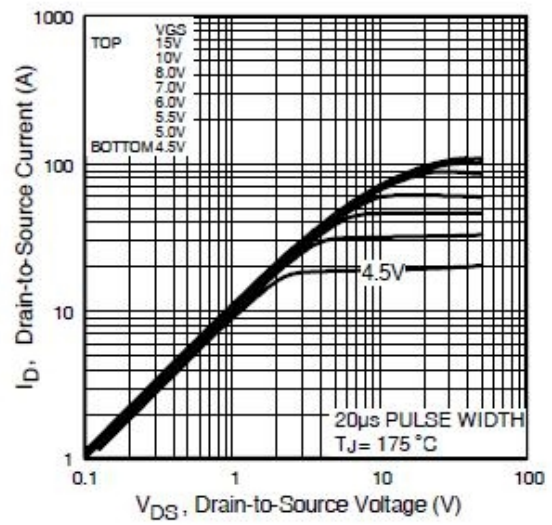
Note:

1. The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
2. The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
3. The EAS data shows Max. rating . The test condition is $R_G=25\Omega$, $L=10mH$

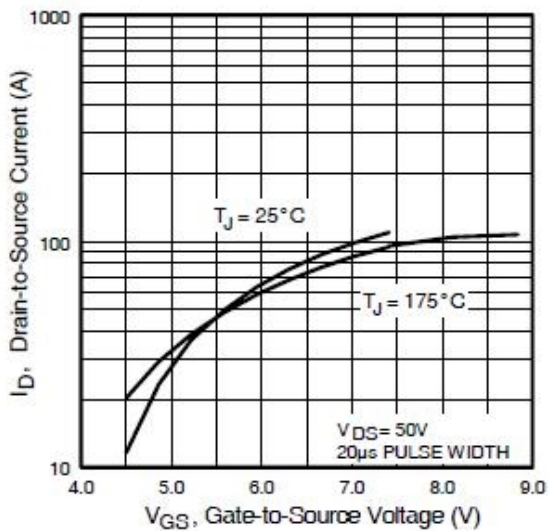
Typical Characteristics



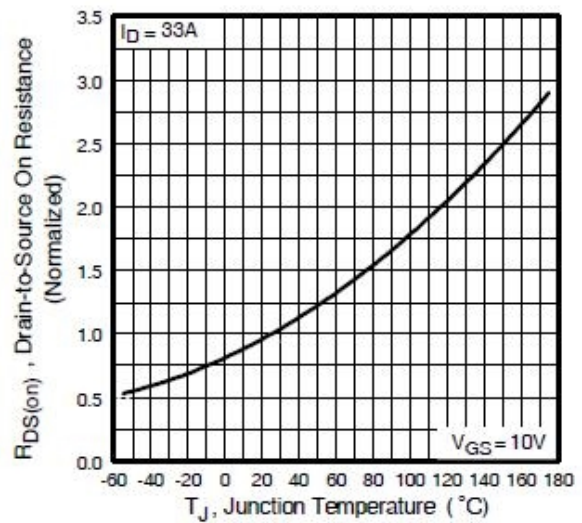
Typical Output Characteristics



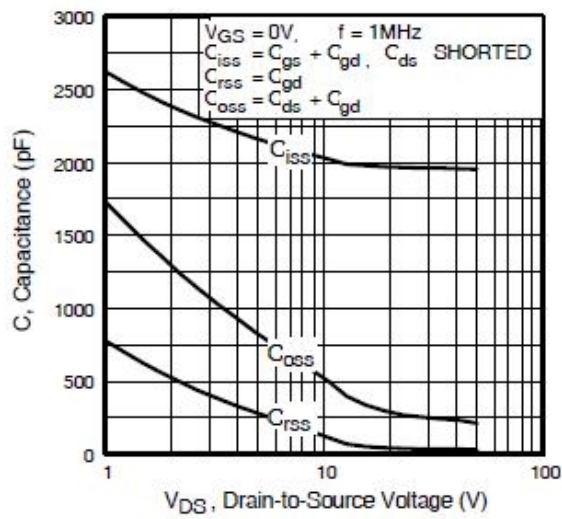
Typical Output Characteristics



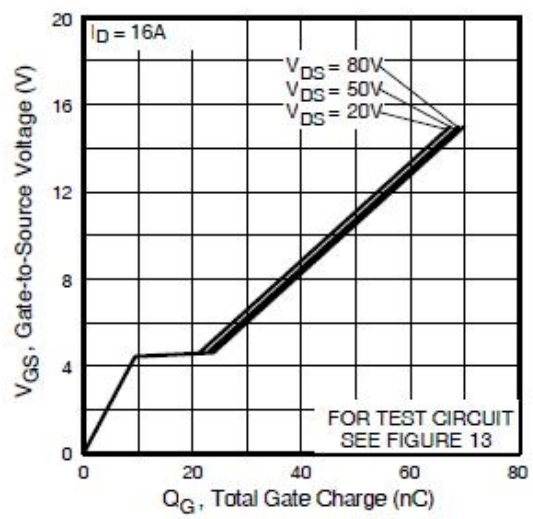
Typical Transfer Characteristics



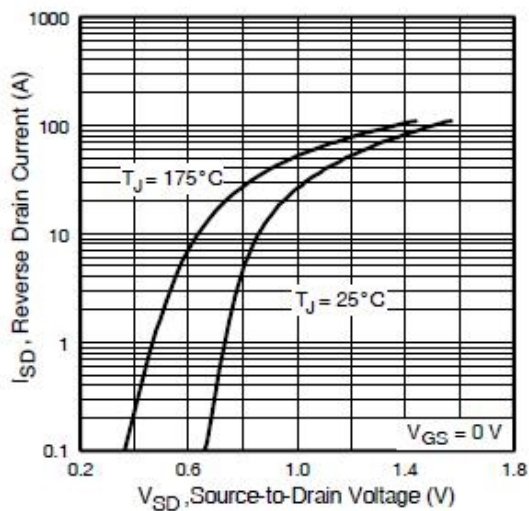
Normalized On-Resistance Vs. Temperature



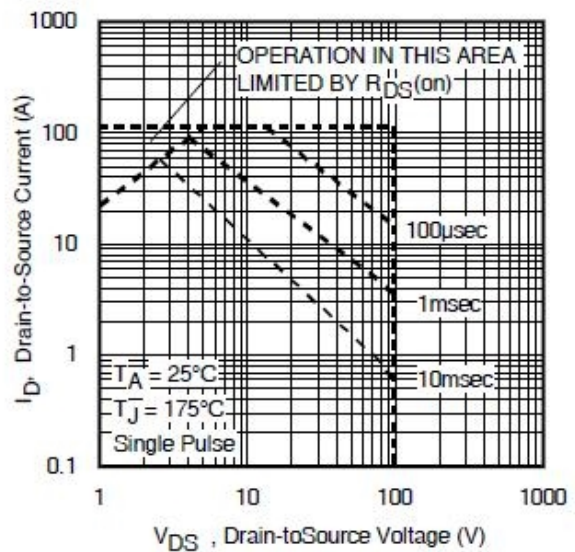
Typical Capacitance Vs. Drain-to-Source Voltage



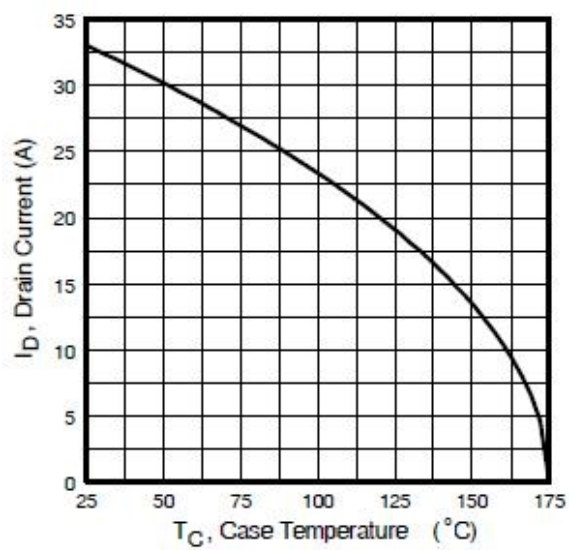
Typical Gate Charge Vs. Gate-to-Source Voltage



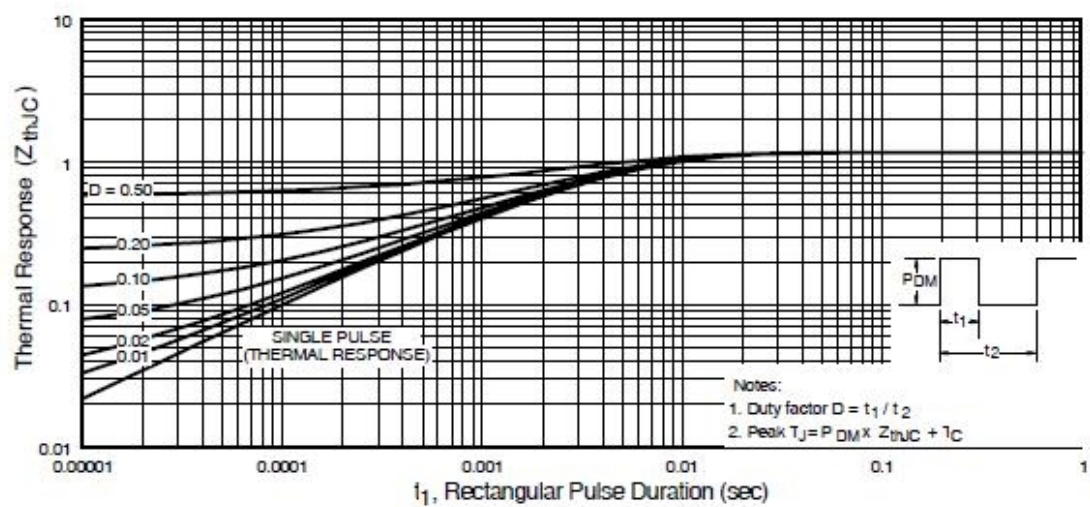
Typical Source-Drain Diode Forward Voltage



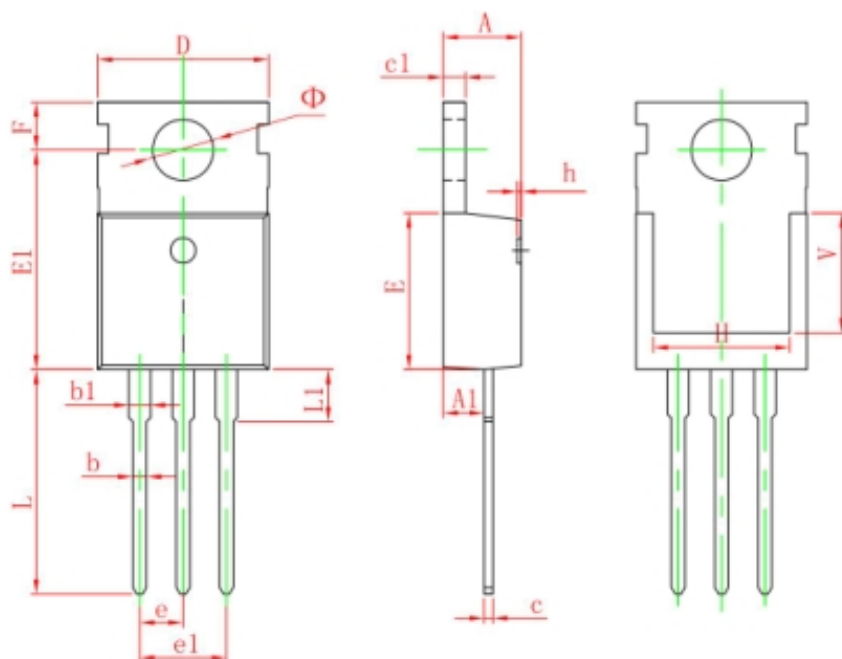
Maximum Safe Operating Area



Maximum Drain Current Vs. Case Temperature



TO-220-3L-C 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	13.050	0.498	0.514
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	6.900 REF.		0.276 REF.	
Φ	3.400	3.800	0.134	0.150