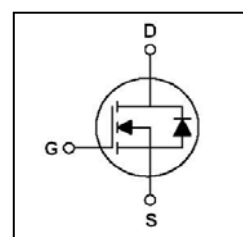
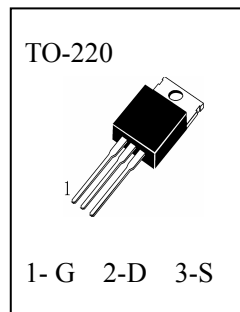


**N-Channel Enhancement Mode Field Effect Transistor****■ Applications**

- Servo motor control.
- DC/DC converters
- Low Power Switching mode power appliances.
- Other switching applications.

■ Features

- 50A, 60V(See Note), $R_{DS(on)} < 28mV\Omega @ V_{GS} = 10V$
- Fast switching
- 100% avalanche tested
- Minimize input capacitance and gate charge
- Equivalent Type:ME50N06

**■ Maximum Ratings** ($T_a=25^{\circ}C$ unless otherwise specified)

T_{stg}	Storage Temperature	-----	$-55\sim 150^{\circ}C$
T_j	Operating Junction Temperature	-----	$150^{\circ}C$
V_{DSS}	Drain-Source Voltage	-----	60V
V_{GSS}	Gate-Source Voltage	-----	$\pm 25V$
I_D	Drain Current (Continuous)($T_c=25^{\circ}C$)	-----	50A
I_{DM}	Pulsed Drain Current (Note 1)	-----	100A
P_D	Maximum Power Dissipation ($T_c=25^{\circ}C$)	-----	60W

■ Thermal Characteristics

Symbol	Items	TO-220	Unit
$R_{thj-case}$	Thermal Resistance Junction-case	Max 2.0	$^{\circ}C/W$
$R_{thj-amb}$	Thermal Resistance Junction-ambient	Max 62.5	$^{\circ}C/W$

**Electrical Characteristics** (Ta=25℃ unless otherwise specified)

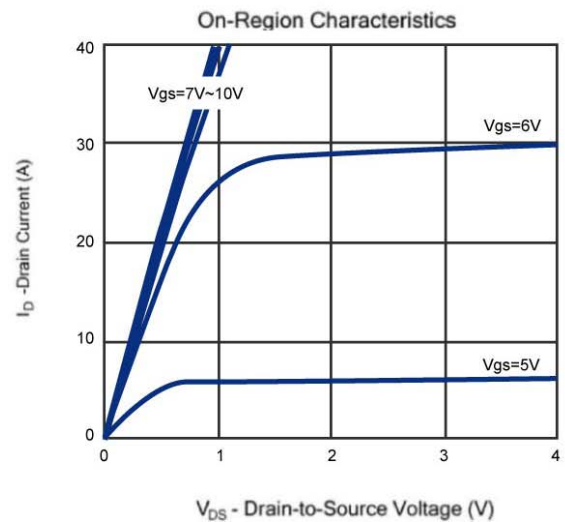
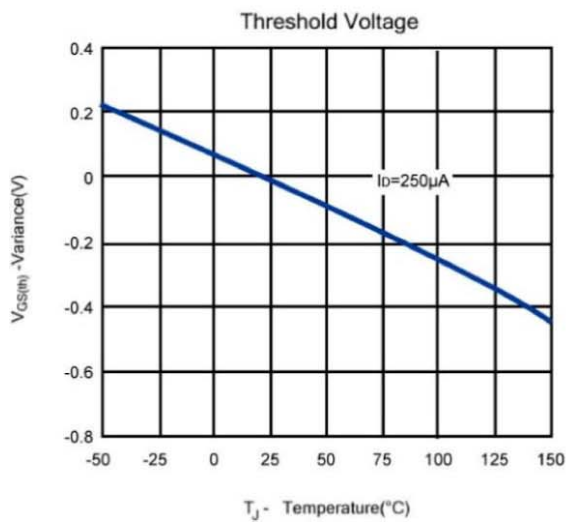
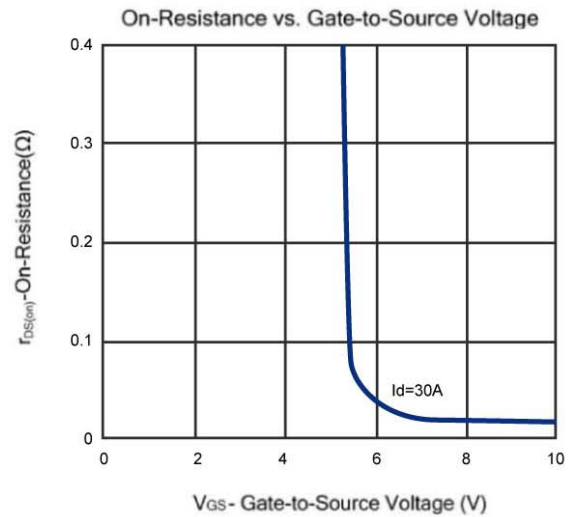
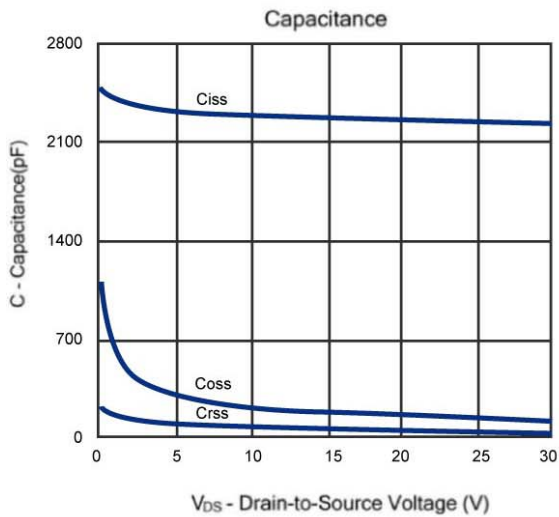
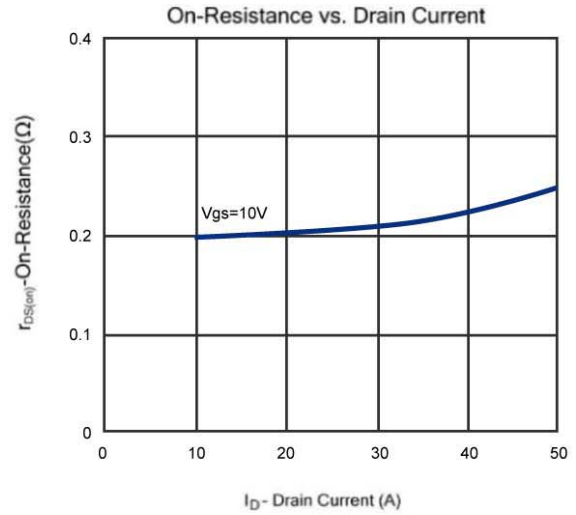
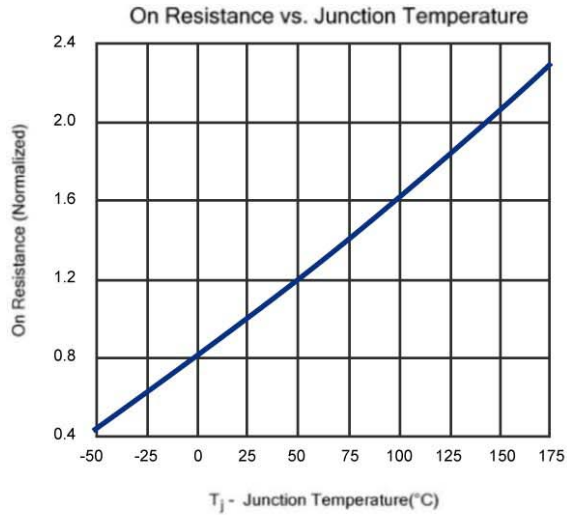
Symbol	Items	Min.	Typ.	Max.	Unit	Conditions
Off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	60			V	I _D =250μA, V _{GS} =0V
I _{DSS}	Zero Gate Voltage Drain Current			1	μA	V _{DS} =60V, V _{GS} =0V
I _{GSS}	Gate – Body Leakage			±100	nA	V _{GS} =±20V, V _{DS} =0V
On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	2.0		4.0	V	V _{DS} =V _{GS} , I _D =250μA
R _{DS(on)}	Static Drain-Source On-Resistance		23	28	mΩ	V _{GS} =10V, I _D =30A (Note 2)
Dynamic Characteristics and Switching Characteristics						
Ciss	Input Capacitance		2270		pF	V _{DS} =15V, V _{GS} =0V, f=1.0 MHz
Coss	Output Capacitance		189		pF	
Crss	Reverse Transfer Capacitance		59		pF	
t _{d(on)}	Turn - On Delay Time		28		nS	V _{DS} =30V, V _{GS} =10 V, R _L =30 Ω, R _G =3.6 Ω (Note 2)
t _r	Rise Time		5		nS	
t _{d(off)}	Turn - Off Delay Time		51		nS	
t _f	Fall Time		6		nS	
Qg	Total Gate Charge		11		nC	V _{DS} =48V, I _D =50A, V _{GS} =4.5V (Note 2)
Qgs	Gate–Source Charge		13		nC	
Qgd	Gate–Drain Charge		9		nC	
Rg	Gate Resistance		2.0		Ω	f=1MHz
Drain-Source Diode Characteristics and Maximun Ratings						
I _S	Continuous Source–Drain Diode Forward Current			50	A	
V _{SD}	Source–Drain Diode Forward On–Voltage			1.2	V	I _S =30A, V _{GS} =0(Note 2)

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature
2. Pulse Test: Pulse width≤300μS, Duty Cycle≤2%

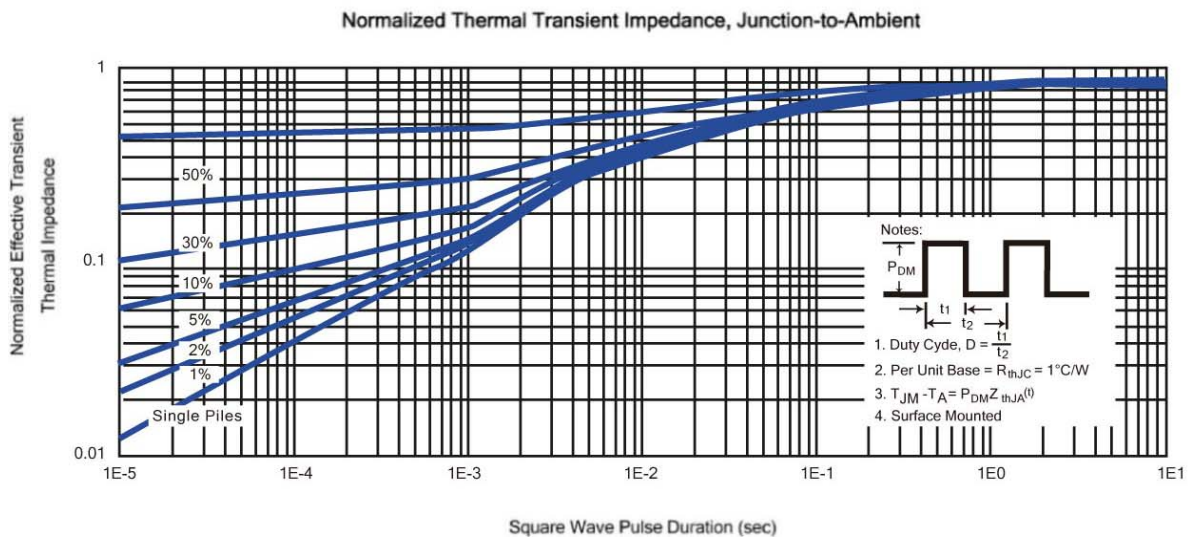
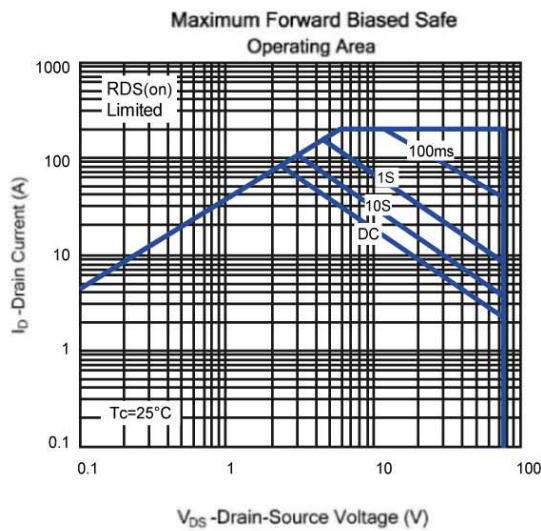
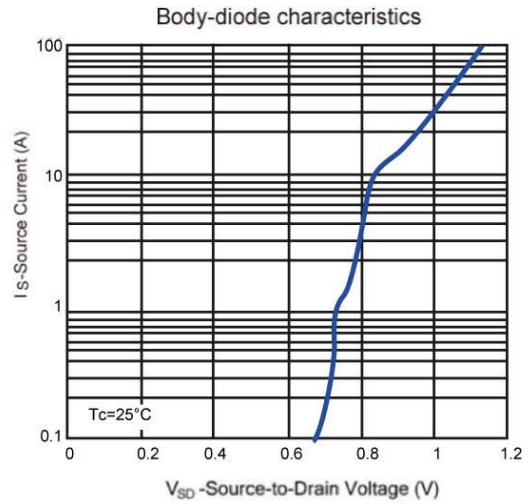
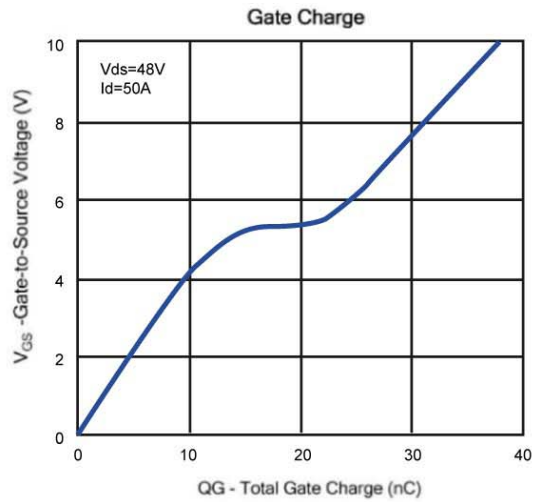


Typical Characteristics





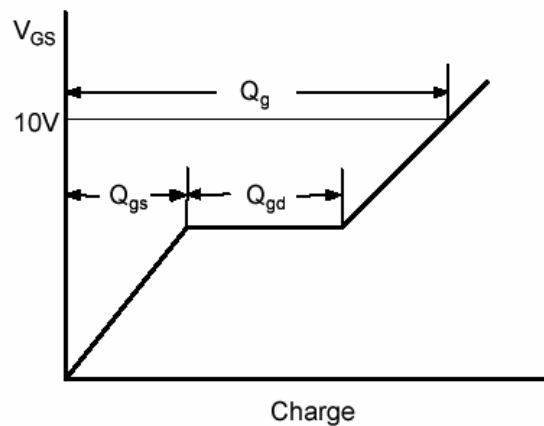
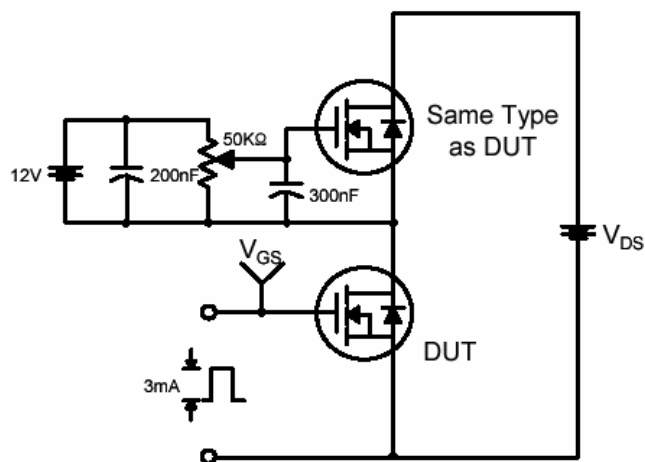
Typical Characteristics



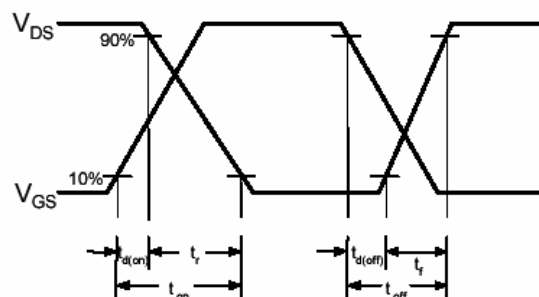
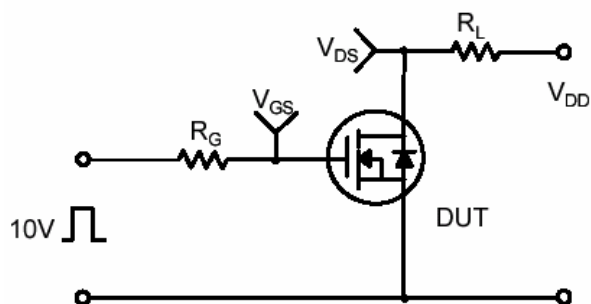


Typical Characteristics

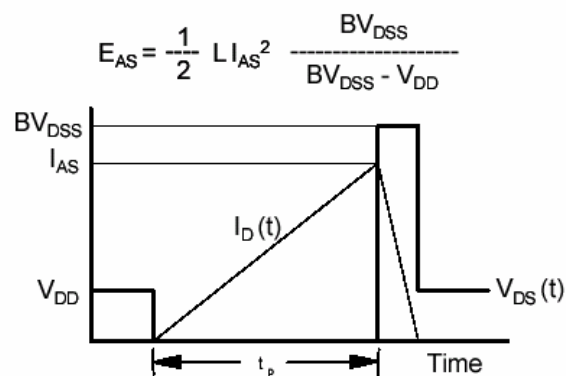
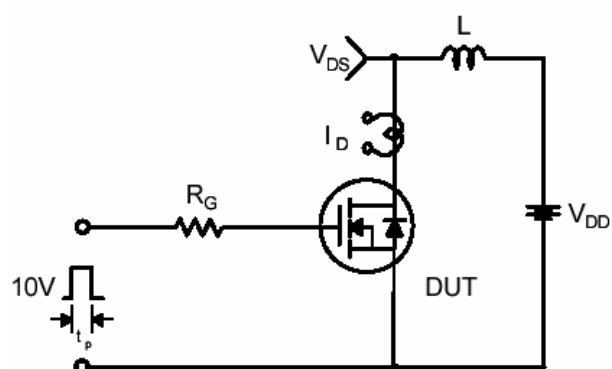
Gate Charge Test Circuit & Waveform



Resistive Switching Test Circuit & Waveforms



Unclamped Inductive Switching Test Circuit & Waveforms





Typical Characteristics

Peak Diode Recovery dv/dt Test Circuit & Waveforms

