

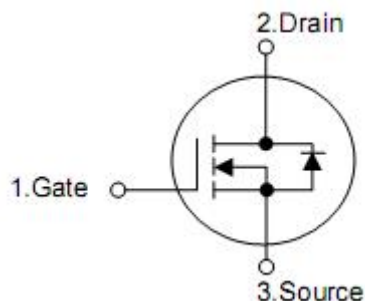
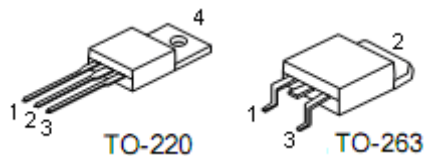
## 1. Description

The KIA740H N-Channel enhancement mode silicon gate power MOSFET is designed for high voltage, high speed power switching applications such as switching regulators, switching converters, solenoid, motor drivers, relay drivers.

## 2. Features

- n  $R_{DS(on)} = 0.45\Omega$  @  $V_{GS} = 10\text{ V}$
- n Avalanche energy specified
- n Rugged-SOA is power dissipation limited
- n Fast switching capability
- n Linear transfer characteristics
- n High input impedance

## 3. Pin configuration



Pin	Function
1	Gate
2	Drain
3	Source
4	Drain

## 4. Absolute maximum ratings

(T<sub>C</sub>=25 °C , unless otherwise specified)

Parameter	Symbol	Ratings	Units
Drain-source voltage	V <sub>DSS</sub>	400	V
Gate-source voltage	V <sub>GSS</sub>	±30	V
Drain current continuous	I <sub>D</sub>	T <sub>C</sub> =25°C	10.0
		T <sub>C</sub> =100°C	6.3
Drain current pulsed	I <sub>DP</sub>	8.0	A
Avalanche energy	E <sub>AR</sub> (Note 4)	Repetitive	13.9
		Single pulse	378
Peak diode recovery dv/dt	dv/dt	4.5	V/ns
Total power dissipation	P <sub>D</sub>	T <sub>C</sub> =25°C	139
		Derate above 25°C	1.0
Junction temperature	T <sub>J</sub>	+150	°C
Storage temperature	T <sub>STG</sub>	-55~+150	°C

Note:1.Absolute maximum ratings are those values beyond which the device could be permanently damaged

Absolute maximum ratings are stress ratings only and functional device operation is not implied

2.Repetitive Ratings:Pulse width limited bu maximum junction temperature

3.L = 6 mH, IAS = 10.5 A, VDD = 50V, RG = 25 Ω, Starting T<sub>J</sub> = 25°C

4.Repetitive Rating : Pulse width limited by maximum junction temperature

## 5. Thermal characteristics

Parameter	Symbol	Rating	Unit
Thermal resistance,Junction-to-case	θ <sub>JC</sub>	1.0	°C/W
Thermal resistance,Junction-to-ambient	θ <sub>JA</sub>	62.5	°C/W



SEMICONDUCTORS

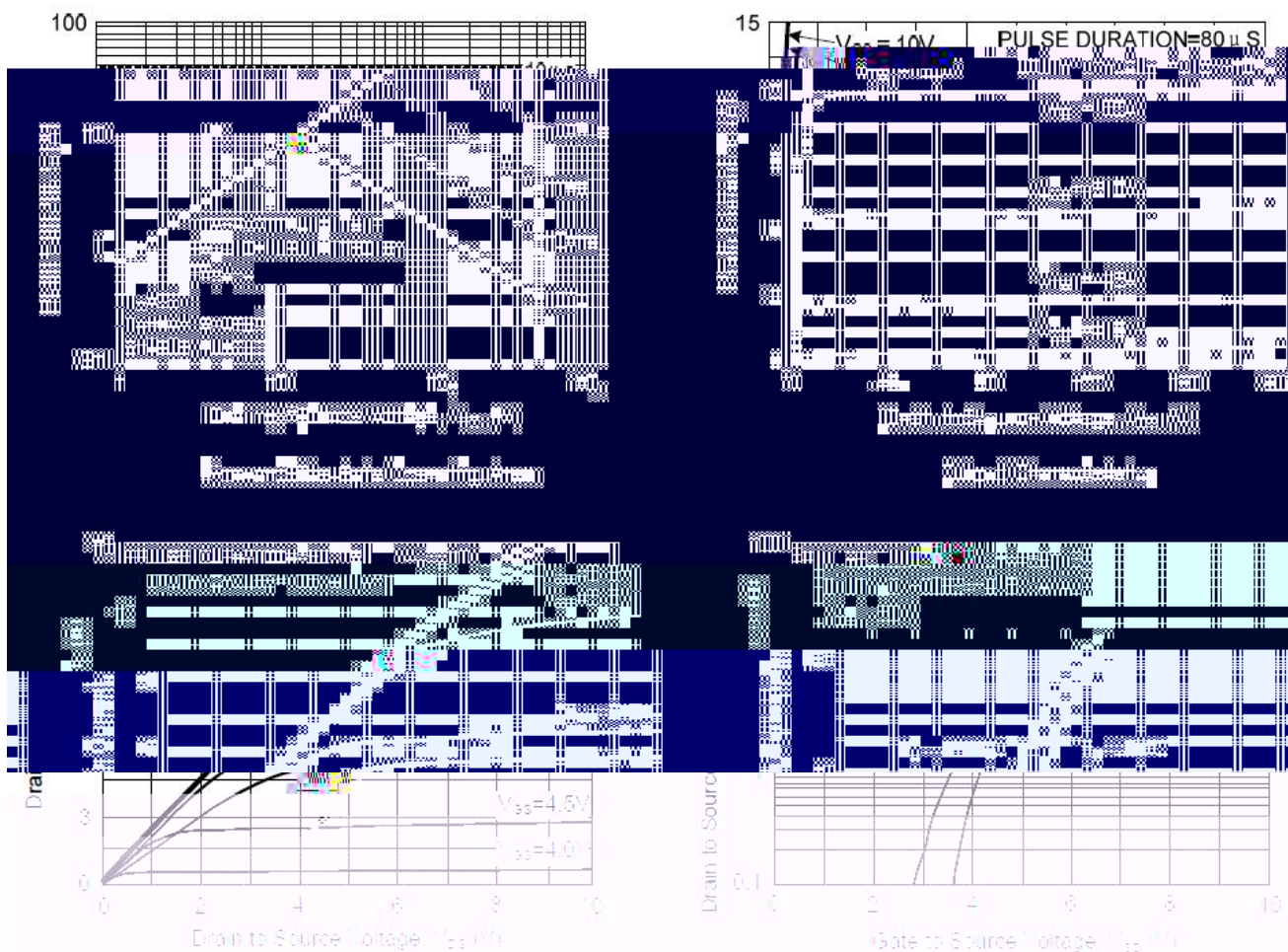
10Amps, 400V  
N-CHANNEL MOSFET

740H

6. Electric-0.11688 TD (6) 1688 TD (6)84 TD -0.0-0.02832 Tc (.312.06 Tc (ct)6) 1688

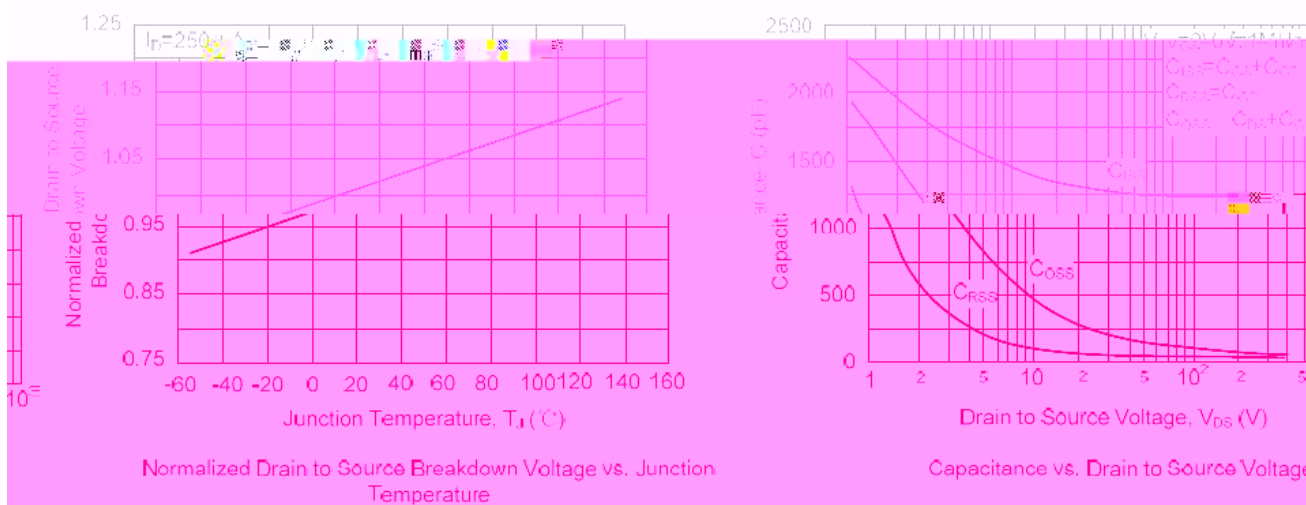
m8M.028

**7. Test circuits and waveforms**



Saturation Characteristics

Transfer Characteristics



Normalized Drain to Source Breakdown Voltage vs. Junction Temperature

Capacitance vs. Drain to Source Voltage

