◆ DESCRIPTION

The MT7408 is the P-Channel logic enhancement mode power field effect transistors are produced using high cell density, DMOS trench technology.

This high density process is especially tailored to minimize on-state resistance.

These devices are particularly suited for low voltage application such as cellular phone and notebook computer power management and other battery powered circuits where high-side switching and low in-line power loss are needed in a very small outline surface mount package.

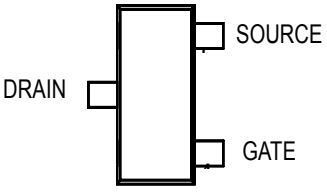
◆ FEATURES

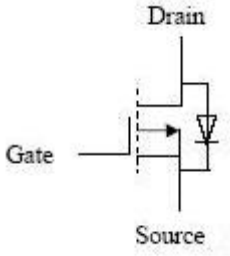
- -30V/-1.4A,RDS(ON)= 150mΩ@VGS=-10V
- -30V/-1.2A,RDS(ON)= 250mΩ@VGS=-4.5V
- Super high density cell design for extremely low RDS (ON)
- Exceptional on-resistance and maximum DC current capability
- SOT-323 (SC–70-3L) package design

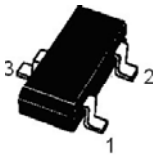
◆ APPLICATIONS

- Power Management in Note
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch
- DSC
- LCD Display inverter

◆ PIN CONFIGURATION







◆ ABSOLUTE MAXIMUM RATINGS (T_A=25℃ Unless otherwise noted)

Parameter		Symbol	Maximum	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	Tc= 25℃	I_D	-1.4	A
	Tc= 70℃		-1.1	
Pulsed Drain Current		I_{DM}	-10	A
Power Dissipation	Tc= 25℃	P_D	0.35	W
	Tc= 70℃		0.22	
Operating junction temperature range		T_J	150	°C
Storage temperature range		T_{STG}	- 55 to 150	°C

◆ THERMAL RESISTANCE RATINGS

Thermal Resistance	Symbol	Maximum	Unit
Junction-to-Ambient	$R_{\theta JA}$	360	°C/W

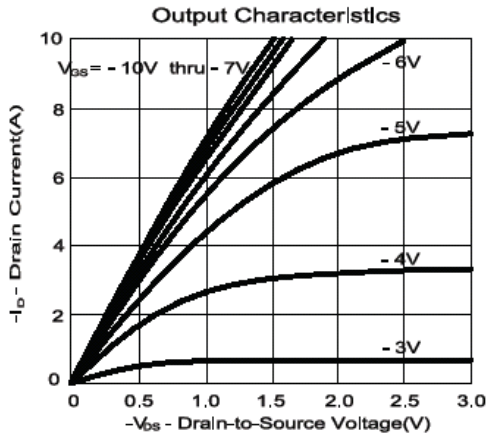
◆ ORDERING INFORMATION

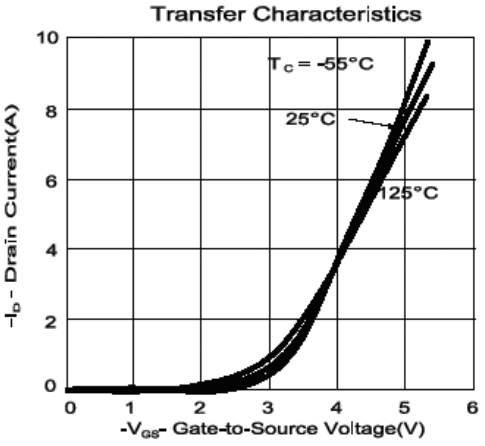
Device	Package	Shipping
MT7408	SOT-323	3000 PCS / Tape & Reel

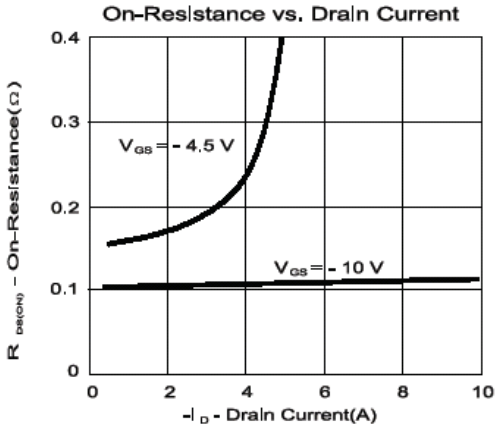
◆ ELECTRICAL CHARACTERISTICS (T_A=25℃ Unless otherwise noted)

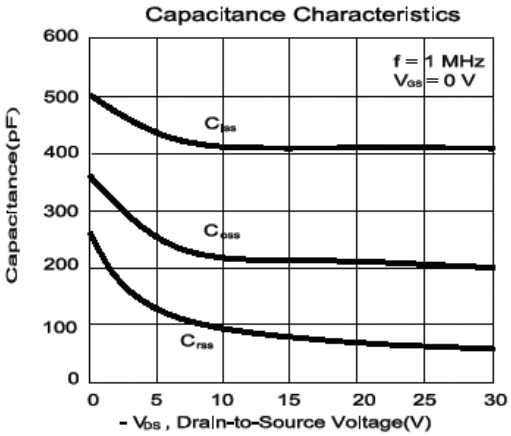
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Parameters						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D= -250μA	-30	-	-	V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D= -250μA	-1.0	-1.5	-2.5	V
Gate Leakage Current	I_{GSS}	V_{DS} = 0V, V_{GS} = ±20 V	-	-	±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -24V, V_{GS} = 0 V	-	-	-1	μA
		V_{DS} = -20V, V_{GS} = 0 V, T_J=125°C	-	-	-10	
Forward Transconductance	Gfs	V_{DS} = -5V, I_D= -1.4A	-	16	-	s
On-State Drain Current	$I_{D(ON)}$	V_{DS} ≦-5V, V_{GS} = -10V	-10	-	-	A
Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS} = -10V, I_D= -1.4A	-	100	150	mΩ
		V_{GS} = -4.5V, I_D= -1.2A	-	180	250	
Diode Forward Voltage	V_{SD}	I_F=-1A,V_{GS}=0V	-	-	-1.0	V
Continuous Current	I_S		-	-	-0.7	A
Pulsed Current	I_{SM}		-	-	-1.4	
Dynamic Parameters						
Input Cap.	Ciss	V_{DS} = -15V, V_{GS} = 0V, f=1MHz	-	410	-	pF
Output Cap.	Coss		-	220	-	
Reverse Transfer Cap.	Crss		-	85	-	
Total Gate Charge	Qg	V_{DS} = 0.5V, V_{GS} = -10V, I_D=-1.4A	-	5.8	10	nC
Gate-Source Charge	Qgs		-	0.85	-	
Gate-Drain Charge	Qgd		-	1.70	-	
Turn-On Time	Td(on)	V_{DD} = -15V, R_G = 6Ω, I_D=-1.0A, V_{GS}=-10V	-	13	-	ns
	tr		-	36	-	
Turn-Off Time	Td(off)		-	42	-	
	tf		-	34	-	

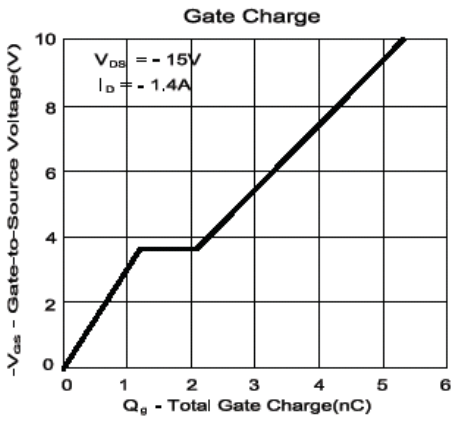
◆ TYPICAL CHARACTERISTICS

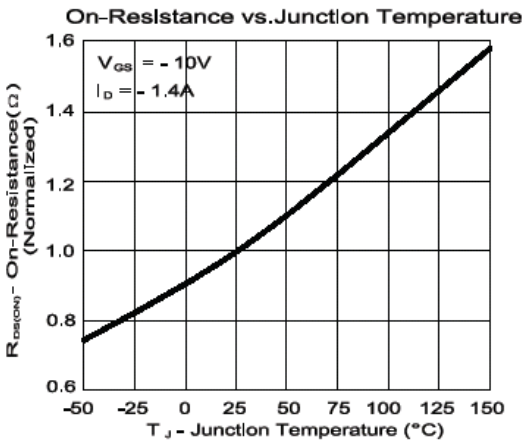






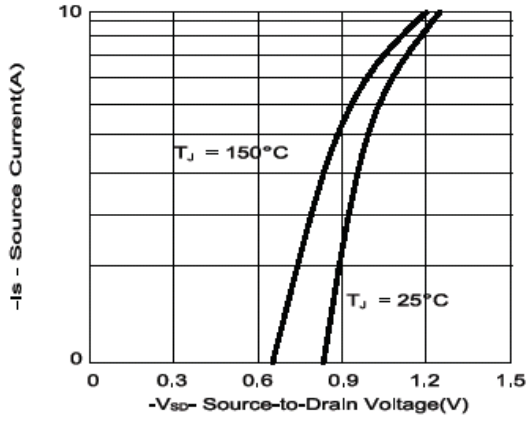




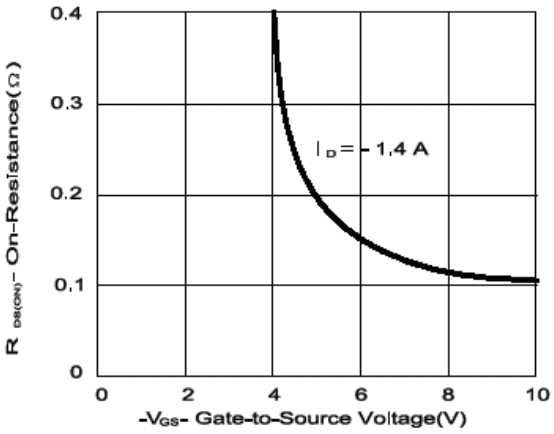


◆ TYPICAL CHARACTERISTICS

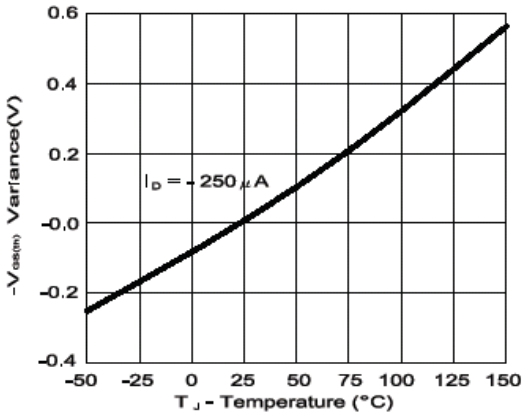
Source-Drain Diode Forward Voltage



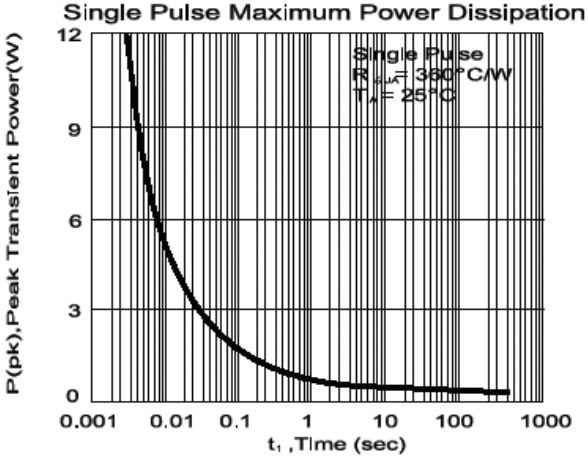
On-Resistance vs. Gate-to-Source Voltage



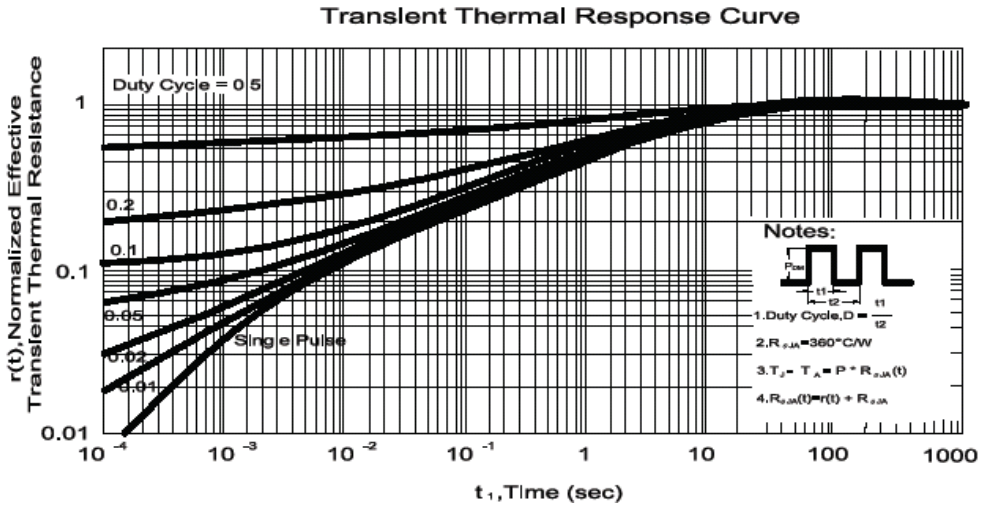
Threshold Voltage



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve



◆ SOT-323 PACKAGE OUTLINE

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A		0.65		H	0.10		0.25
B	1.80		2.40	I	0.15		0.35
C	1.15		1.35	J			
D	1.80		2.20	K			
E	0.80		1.10	L			
F	0.00		0.10	M			
G	0.25		0.40	N