

Features

- $V_{DS} = -30V, I_D = -80A$
- $R_{DS(ON)} \leq 8m\Omega @ V_{GS} = -10V$
- $R_{DS(ON)} \leq 11m\Omega @ V_{GS} = -4.5V$

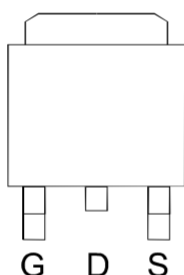
Application

- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable
- Electronics
- Logic Level Shift

Package and Pin Configuration

(TO-252)

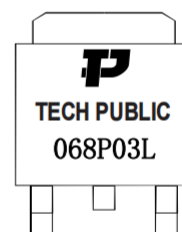
Top View



1. GATE
2. DRAIN
3. SOURCE



Marking:



Absolute Maximum Ratings (TA=25°C Unless Otherwise Noted)

Parameter		Symbol	Maximum Ratings	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current*	$T_C = 25^\circ C$	I_D	-80	A
	$T_C = 70^\circ C$		-65	
Pulsed Drain Current (Package limited)		I_{DM}	-200	A
Maximum Power Dissipation*	$T_C = 25^\circ C$	P_D	83	W
	$T_C = 70^\circ C$		53	
Operating Junction Temperature		T_J	-55 to 150	°C
Thermal Resistance-Junction to Case*		$R_{\theta JC}$	1.5	

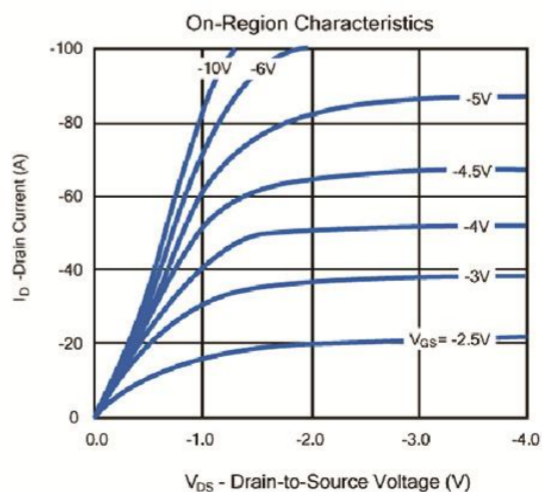
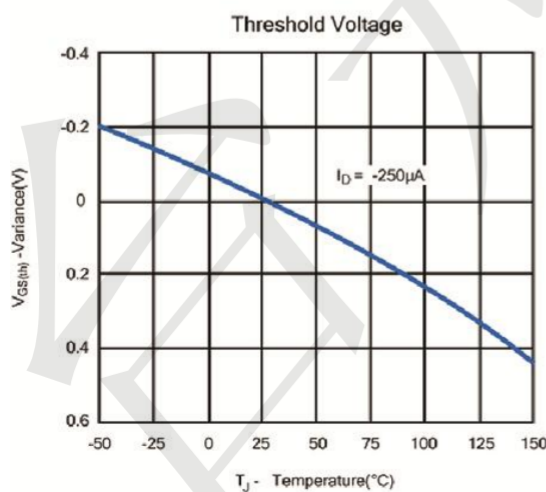
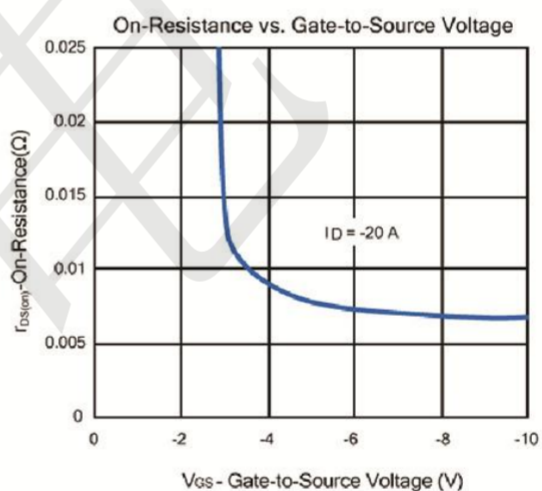
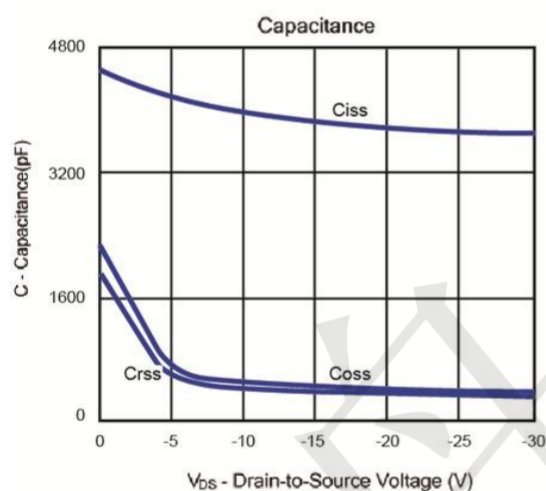
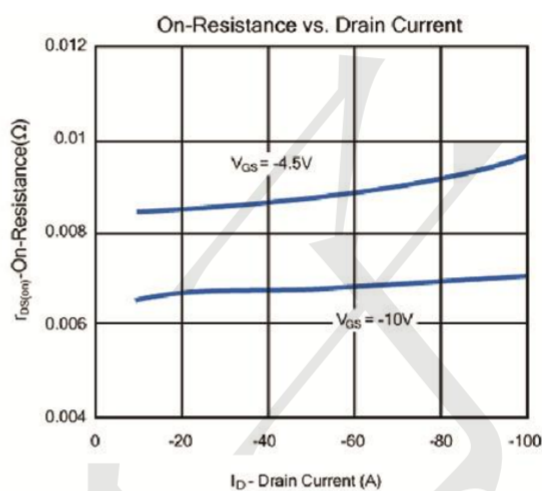
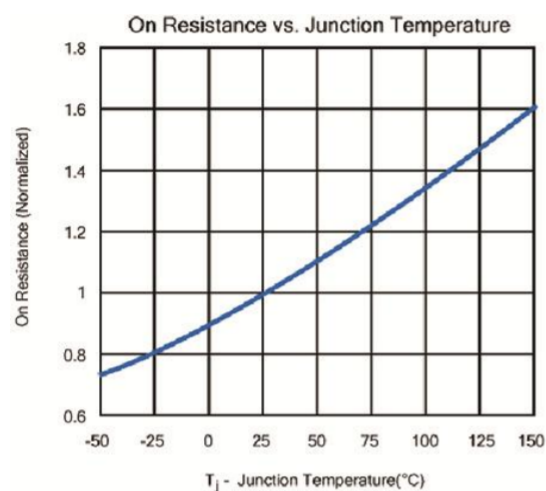
Electrical Characteristics (TA=25°C Unless Otherwise Specified)

Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250 μ A	-30			V
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250 μ A	-1		-3	V
I _{GSS}	Gate Leakage Current	V _{DS} =0V, V _{GS} = $\pm$ 20V			$\pm$ 100	nA
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-30V, V _{GS} =0V			-1	μ A
R _{DS(on)}	Drain-Source On-State Resistance ^a	V _{GS} =-10V, I _D = -20A		6.7	8	m Ω
		V _{GS} =-4.5V, I _D = -20A		8.4	11	
V _{SD}	Diode Forward Voltage	I _S =-1A, V _{GS} =0V		-0.7	-1.2	V
DYNAMIC						
Q _g	Total Gate Charge	V _{DS} =-15V, V _{GS} =-10V, I _D =-20A		88		nC
Q _g	Total Gate Charge	V _{DS} =-15V, V _{GS} =-4.5V, I _D =-20A		44		
Q _{gs}	Gate-Source Charge			12.5		
Q _{gd}	Gate-Drain Charge			19.5		
C _{iss}	Input capacitance	V _{DS} =-15V, V _{GS} =0V, F=1MHz		3887		pF
C _{oss}	Output Capacitance			432		
C _{rss}	Reverse Transfer Capacitance			372		
t _{d(on)}	Turn-On Delay Time	V _{DS} =-15V, R _L =15 Ω V _{GS} =-10V, R _G =6 Ω I _D =-1A		48		ns
t _r	Turn-On Rise Time			20		
t _{d(off)}	Turn-Off Delay Time			170		
t _f	Turn-Off Fall Time			54		

Notes: a. Pulse test: pulse width $\leq$ 300 μ s, duty cycle $\leq$ 2%, Guaranteed by design, not subject to production testing.

b. Matsuki Electric/ Force mos reserves the right to improve product design, functions and reliability without notice.

Typical Characteristics



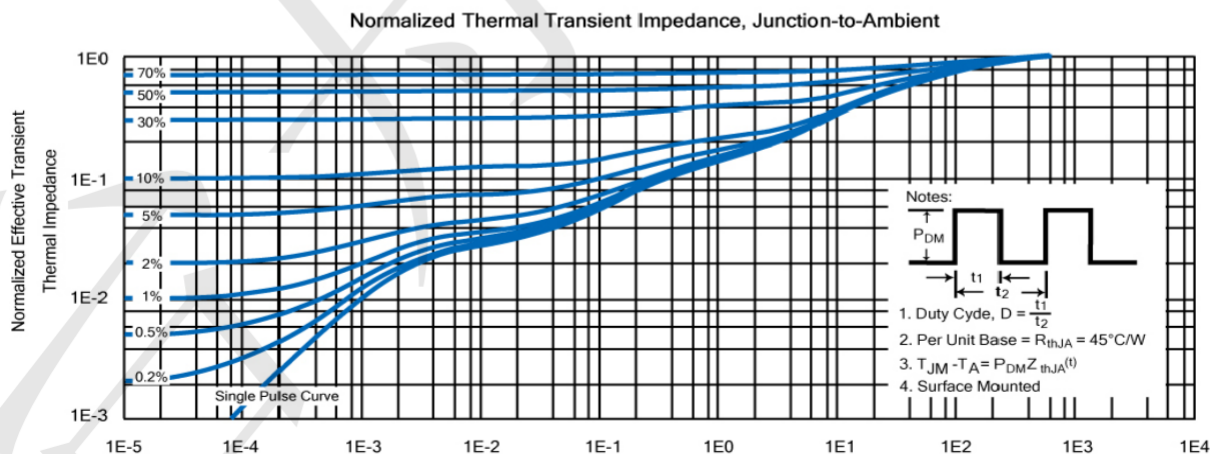
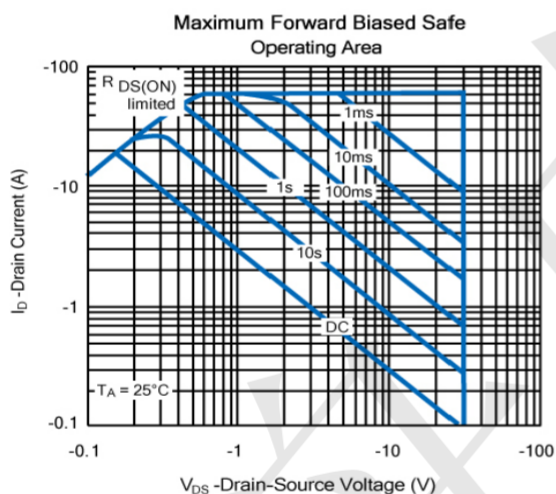
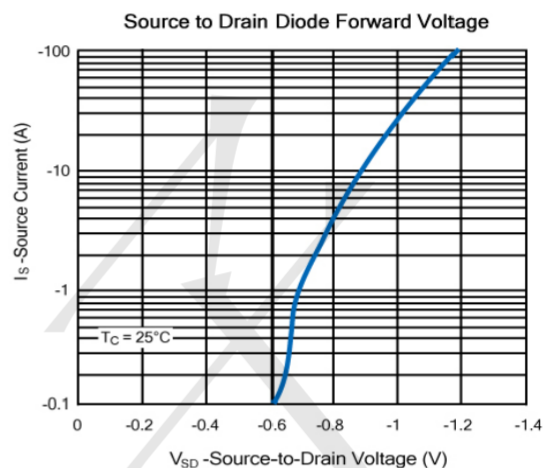
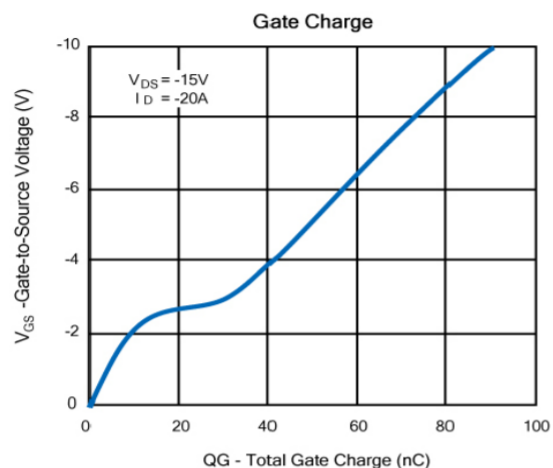
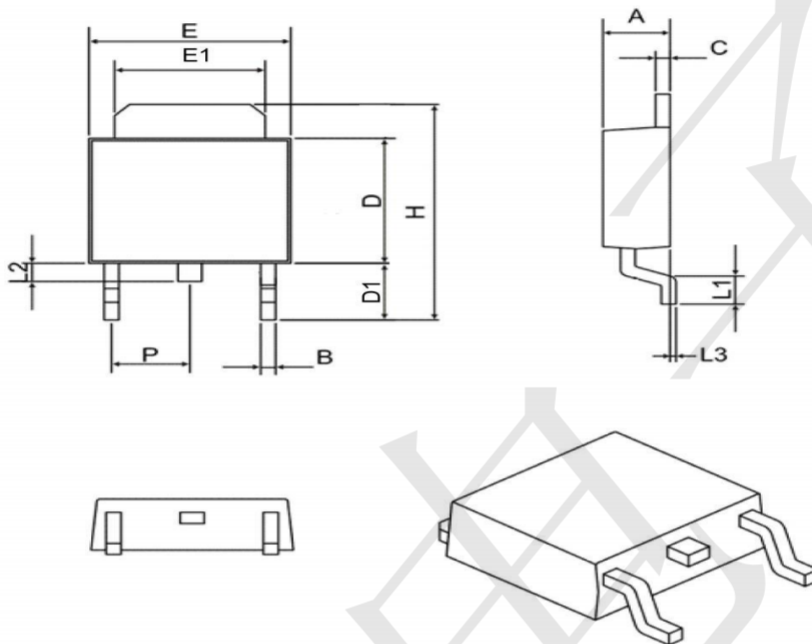


Figure 11 Normalized Maximum Transient Thermal Impedance

TO252 Package Information



SYMBOL	MIN	MAX
A	2.10	2.50
B	0.40	0.90
C	0.40	0.90
D	5.30	6.30
D1	2.20	2.90
E	6.30	6.75
E1	4.80	5.50
L1	0.90	1.80
L2	0.50	1.10
L3	0.00	0.20
H	8.90	10.40
P	2.30 BSC	