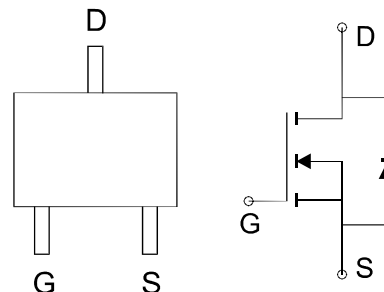


FEATURES

- $R_{DS(ON)} \leq 65 \text{ m}\Omega$ @ $V_{GS}=4.5\text{V}$
- $R_{DS(ON)} \leq 80 \text{ m}\Omega$ @ $V_{GS}=2.5\text{V}$
- $R_{DS(ON)} \leq 95 \text{ m}\Omega$ @ $V_{GS}=1.8\text{V}$
- Super high density cell design for extremely low $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability



SOT-323

APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Load Switch
- DSC

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ Unless Otherwise Noted)

Parameter		Symbol	Maximum Ratings	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	± 12	V
Continuous Drain Current($T_J=150^\circ\text{C}$)*	$T_A=25^\circ\text{C}$	I_D	1.8	A
	$T_A=70^\circ\text{C}$		1.5	
Pulsed Drain Current		I_{DM}	7	A
Maximum Power Dissipation*	$T_A=25^\circ\text{C}$	P_D	0.4	W
	$T_A=70^\circ\text{C}$		0.2	
Operating Junction Temperature		T_J	-55 to 150	$^\circ\text{C}$
Thermal Resistance-Junction to Ambient*		$R_{\theta JA}$	360	$^\circ\text{C/W}$

*The device mounted on 1in^2 FR4 board with 2 oz copper, $t \leq 10\text{S}$.

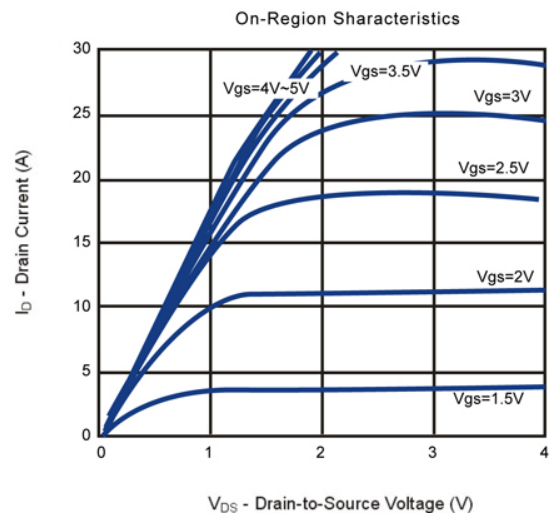
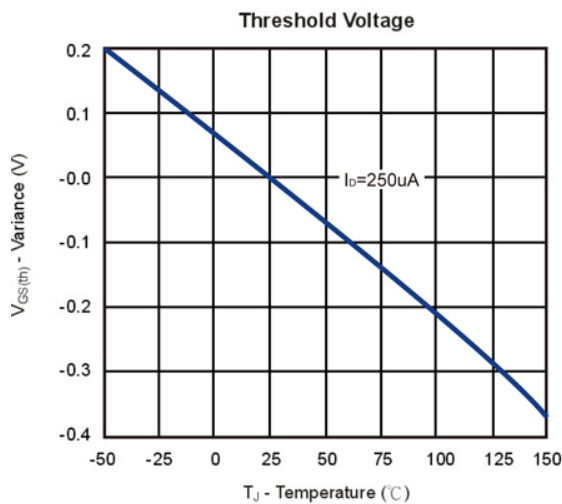
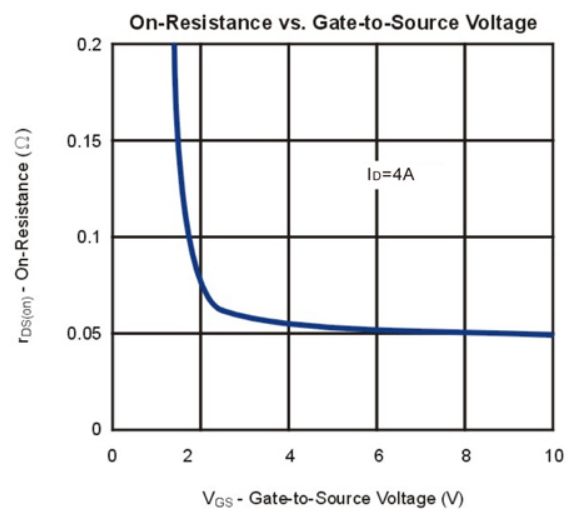
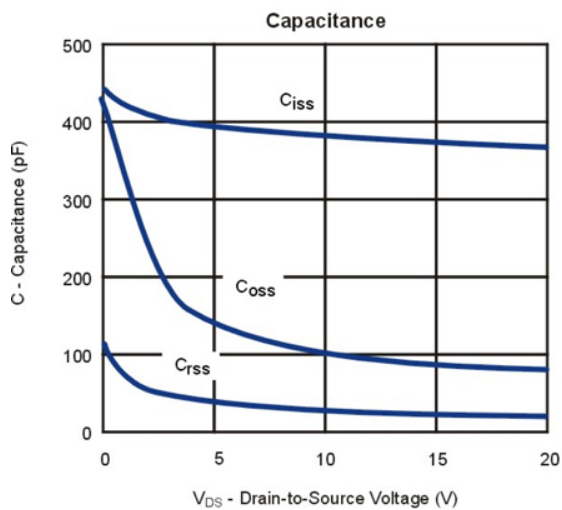
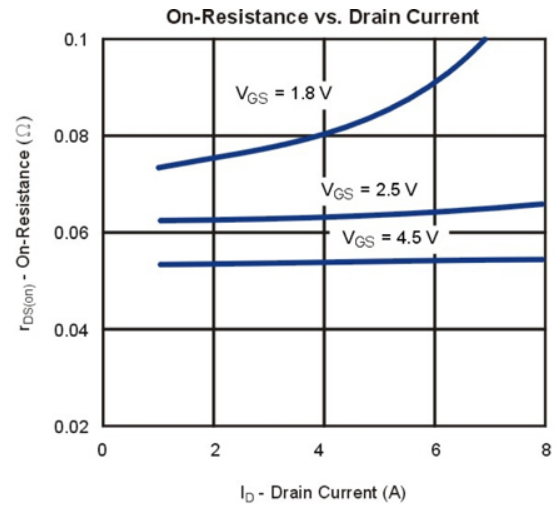
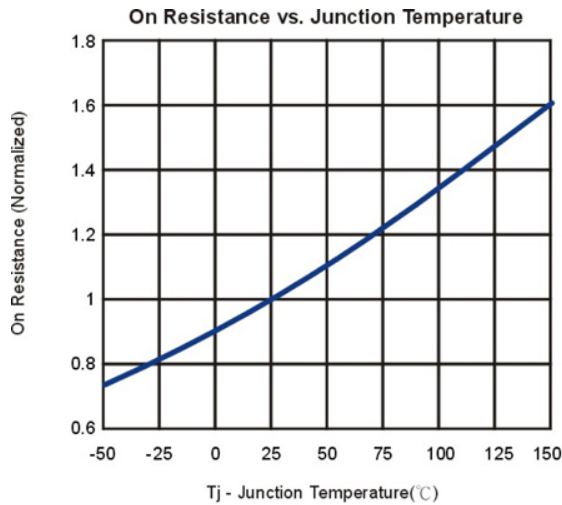
Electrical Characteristics ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified)

Symbol	Parameter	Limit	Min	Typ	Max	Unit
STATIC						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\ \mu\text{A}$	0.4		1	V
I_{GSS}	Gate Leakage Current	$V_{DS}=0\text{V}, V_{GS}=\pm 12\text{V}$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=20\text{V}, V_{GS}=0\text{V}$			1	μA
$R_{DS(ON)}$	Drain-Source On-Resistance ^a	$V_{GS}=4.5\text{V}, I_D=4.0\text{A}$		52	65	$\text{m}\Omega$
		$V_{GS}=2.5\text{V}, I_D=3.4\text{A}$		60	80	
		$V_{GS}=1.8\text{V}, I_D=2.8\text{A}$		75	95	
V_{SD}	Diode Forward Voltage	$I_S=1.7\text{A}, V_{GS}=0\text{V}$		0.8	1.2	V
DYNAMIC						
C_{iss}	Input Capacitance	$V_{DS}=15\text{V}, V_{GS}=0\text{V}, f=1\text{MHz}$		370		pF
C_{oss}	Output Capacitance			90		
C_{rss}	Reverse Transfer Capacitance			25		
Q_g	Total Gate Charge	$V_{DS}=15\text{V}, V_{GS}=4.5\text{V}, I_D=2.8\text{A}$		8.7		nC
Q_{gs}	Gate-Source Charge			1.5		
Q_{gd}	Gate-Drain Charge			3.5		
$t_{d(on)}$	Turn-On Delay Time	$V_{DD}=15\text{V}, R_L=6\Omega$ $I_D=1.0\text{A}, V_{GEN}=10\text{V}$ $R_G=6\Omega$		7.5		ns
t_r	Turn-On Rise Time			18		
$t_{d(off)}$	Turn-Off Delay Time			40		
t_f	Turn-Off Fall Time			3.5		

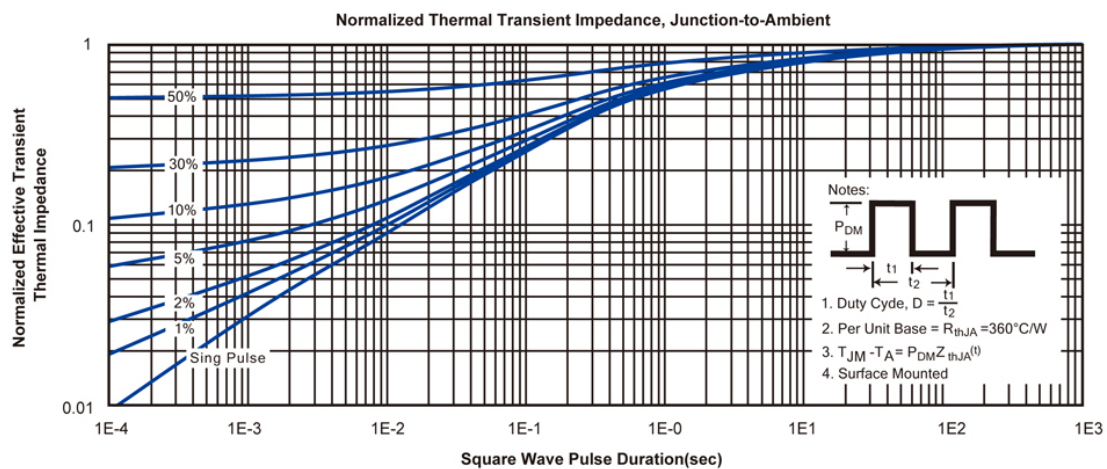
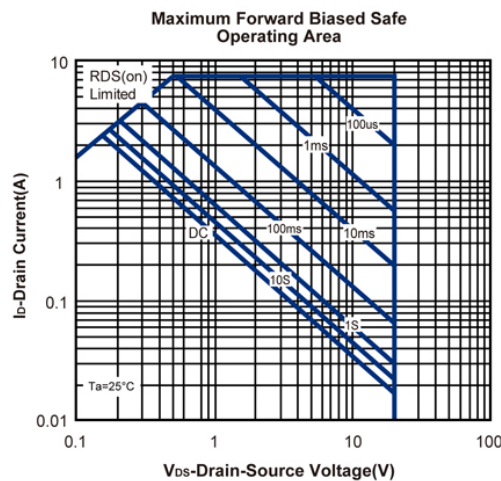
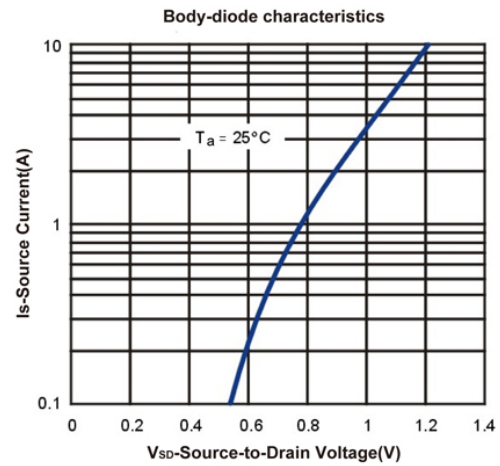
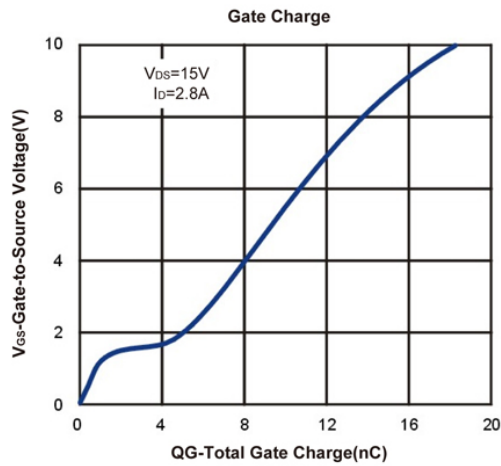
Notes: a. Pulse test; pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$

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

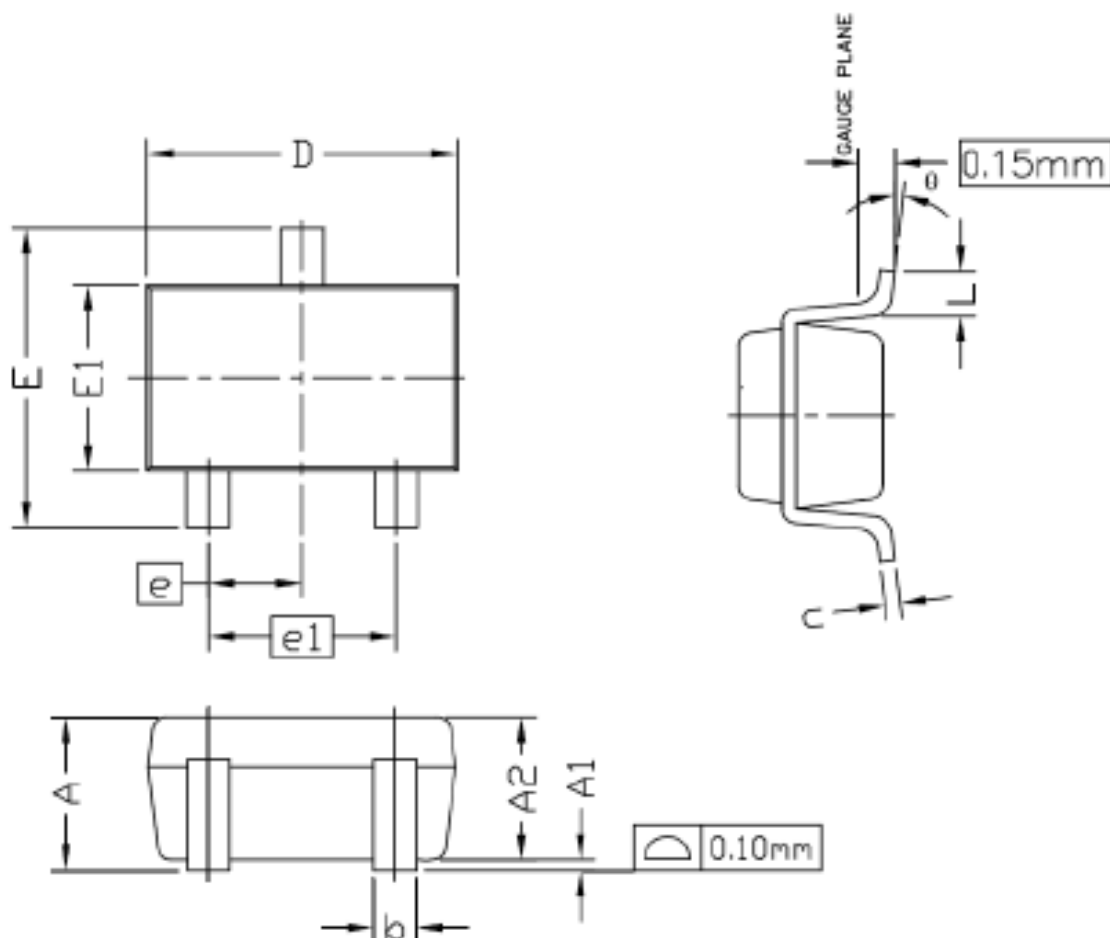
Typical Characteristics (T_J = 25°C Noted)



Typical Characteristics (T_J = 25°C Noted)



SC-70-3L(SOT-323) Package Outline



SYMBOL	MILLIMETERS (mm)	
	MIN	MAX
A	0.80	1.10
A1	0.00	0.10
A2	0.70	1.00
b	0.20	0.40
c	0.08	0.22
D	1.80	2.20
E	1.80	2.45
e	0.65 BSC	
e1	1.30 BSC	
E1	1.10	1.40
L	0.20	0.46
θ	0°	8°