P-Channel 20V(D-S) MOSFET

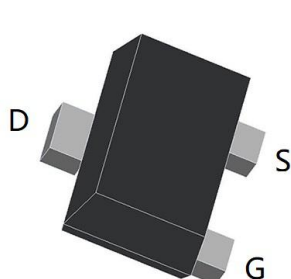| Product summary		
V_{DS}	-20	V
$R_{DS(ON)}$(at V_{GS}=-4.5V) Typ.	440	mΩ
$R_{DS(ON)}$(at V_{GS}=-2.5V) Typ.	600	mΩ
I_D(T_A=25℃)	-0.6	A

Features

● Low Input Capacitance
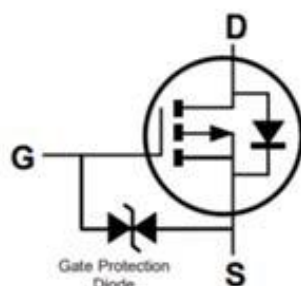● Fast Switching Speed
● Low Gate Threshold Voltage

Applications

● Load Switching
● Logic Level Shift

Pin Configuration

SOT-723

Packing Information

Device	Package	Reel Size	Quantity(Min. Package)
ECDK1013E	SOT-723	7″	10000pcs

Absolute Maximum Ratings (at TA=25℃ Unless Otherwise Noted)

Symbol	Parameter		Rating	Units
V_{DS}	Drain-Source Voltage		-20	V
V_{GS}	Gate-Source Voltage		±8	V
I_D	Continuous Drain Current at V_{GS}=10V	T_A=25℃	-0.6	A
		T_A=70℃	-0.48	A
I_{DM}	Pulse Drain Current Tested [A]		-1.2	A
P_D	Power Dissipation	T_A=25℃	0.15	W
T_J,T_{STG}	Junciton and Storage Temperature Range		-55 to +150	℃

Thermal Characteristics

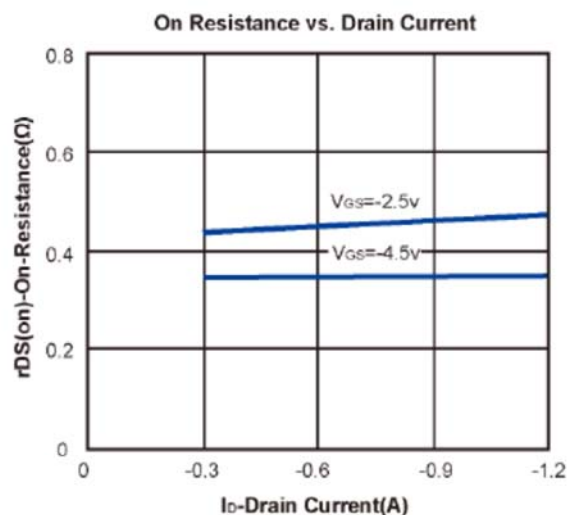| Symbol	Parameter	Typical	Units
$R_{\theta JA}$	Thermal Resistance-Junction to ambient [B]	833	℃/W

Electrical Characteristics (at T_J =25℃ Unless Otherwise Noted)

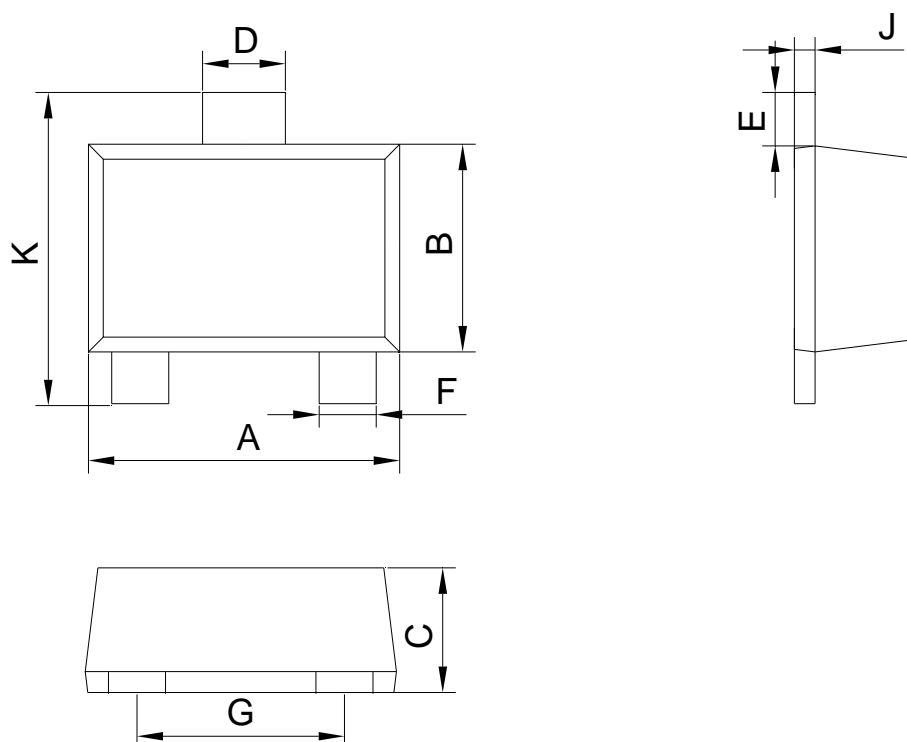| Symbol	Parameter	Condition	Min.	Typ.	Max.	Units
Static Parameters						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D=-250uA	-20	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-20V,V_{GS}=0V	--	--	-1	uA
I_{GSS}	Gate-Body Leakage Current	V_{DS}=0V,V_{GS}=±8V	--	--	±10	uA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS},I_D=-250uA	-0.4	--	-1.0	V
$R_{DS(ON)}$	Drain-Source On-State Resistance	V_{GS}=-4.5V,I_D=-0.7A	--	440	540	mΩ
		V_{GS}=-2.5V,I_D=-0.6A	--	600	720	mΩ
V_{SD}	Forward Voltage	I_{SD}=-0.35A,V_{GS}=0V	--	--	-1.2	V
Dynamic and Switching Parameters						
C_{iss}	Input Capacitance	V_{GS}=0V,V_{DS}=-16V f=1MHZ	--	152	--	pF
C_{oss}	Output Capacitance		--	18	--	pF
C_{rss}	Reverse Transfer Capacitance		--	6	--	pF
Q_g	Total Gate Charge	V_{DS}=-16V,I_D=-0.2A V_{GS}=-4.5V	--	2.8	--	nC
Q_{gs}	Gate-Source Charge		--	2.1	--	nC
Q_{gd}	Gate-Drain Charge		--	0.5	--	nC
$t_{D(on)}$	Turn-on Delay Time	V_{DD}=-10V I_D=-0.2A, R_{GEN}=10Ω, V_{GS}=-5V	--	51.3	--	ns
t_r	Turn-on Rise Time		--	24.2	--	ns
$t_{D(off)}$	Turn-off Delay Time		--	246	--	ns
t_f	Turn-off Fall Time		--	81.2	--	ns

A. Pulse Test: Pulse Width≤300us,Duty cycle ≤2%.

B. Device mounted on FR-4 PCB, 1 inch x 1 inch x 0.062 inch.

Typical Characteristics

On-Region Characteristics

Threshold Voltage

On Resistance vs. Gate-to-Source Voltage

On Resistance vs. Drain Current

Gate Charge

Capacitance
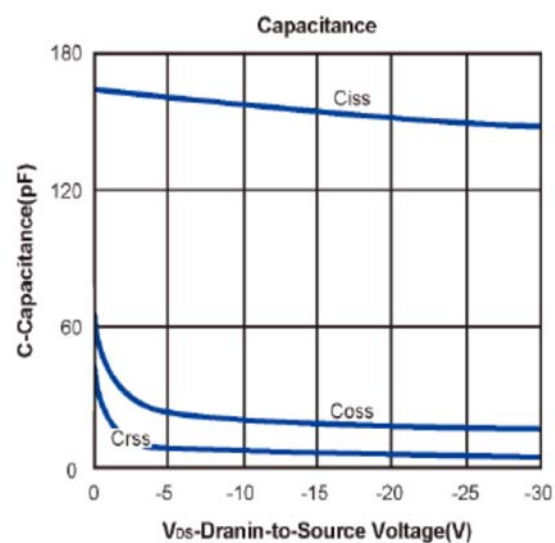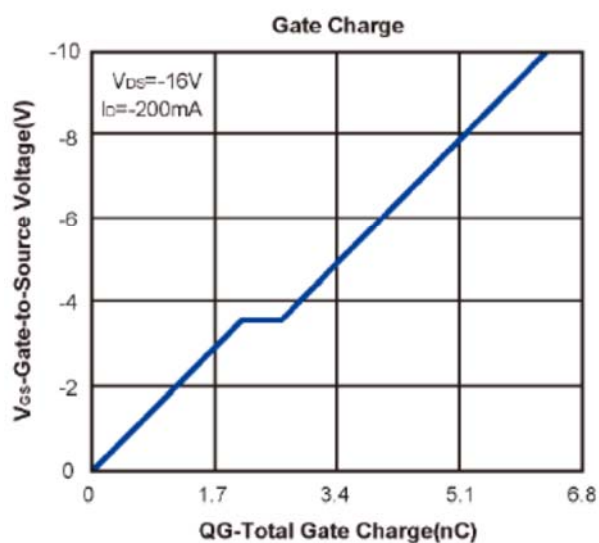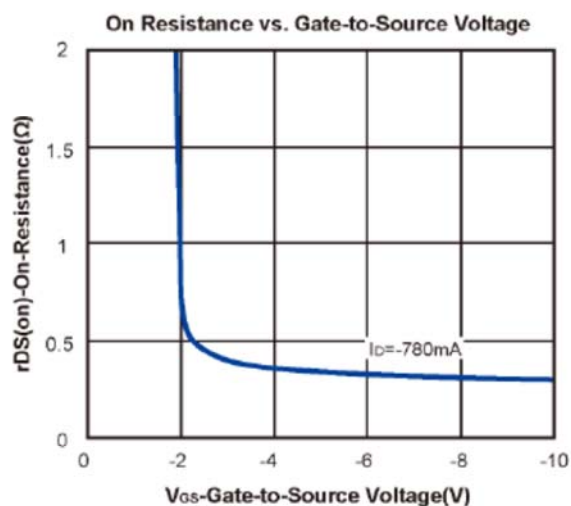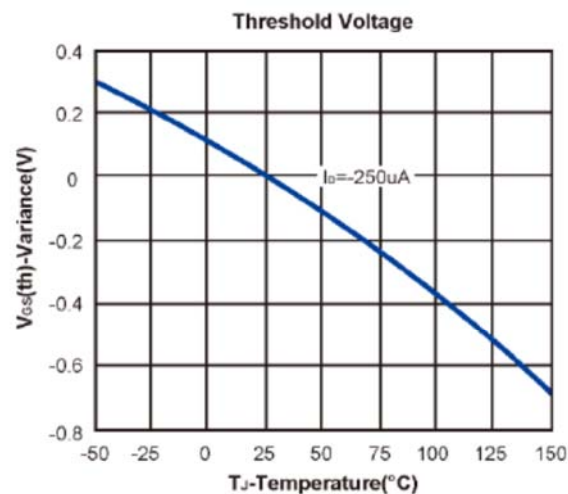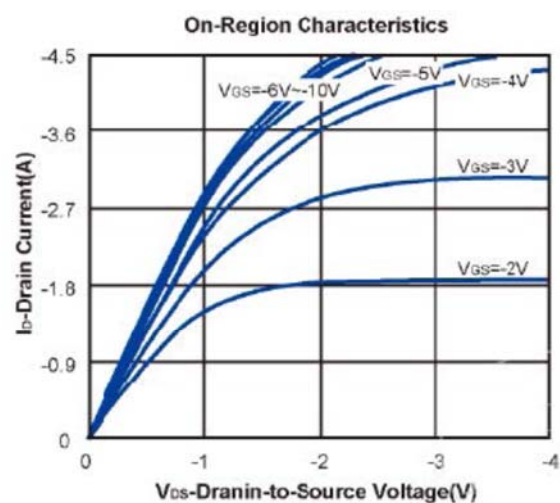
SOT-723 Package Information

SOT-723		
Dim	Min	Max
A	1.10	1.30
B	0.70	0.90
C	0.40	0.54
D	0.22	0.42
E	0.10	0.30
F	0.12	0.32
G	0.70	0.90
J	0.08	0.15
K	1.10	1.30