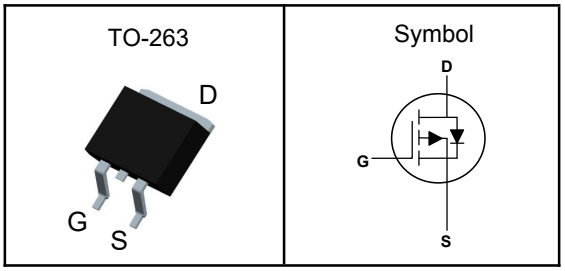
P-Channel Enhancement Mode MOSFET

Features

- Low Rdson for low conduction loss
- Reliable and Rugged
- ROHS Compliant & Halogen-Free

Pin Description



Applications

- Power Management in Desktop Computer
- DC/DC Converters

V_{DSS}	-80	V
$R_{DS(ON)-Typ}$	13	mΩ
I_D	-65	A

Absolute Maximum Ratings(T_C=25℃, Unless Otherwise Noted)

Symbol	Parameter		Rating	Unit
V_{DSS}	Drain-Source Voltage		-80	V
V_{GSS}	Gate-Source Voltage		±20	V
T_J	Maximum Junction Temperature		-55 to 150	℃
T_{STG}	Storage Temperature Range		-55 to 150	℃
I_{DM} ①	Pulse Drain Current Tested	T_C=25°C	-188	A
I_D	Continuous Drain Current	T_C=25°C	-65	A
P_D	Maximum Power Dissipation	T_C=25°C	75	W
EAS	Single Pulse Avalanche Energy	L=0.1mH	156	mJ

Thermal Characteristics

Symbol	Parameter	Rating	Unit
$R_{\theta JA}$ ③	Thermal Resistance-Junction to Ambient	36	℃/W
$R_{\theta JC}$	Thermal Resistance Junction-Case	1.73	℃/W

Note ①: Max. current is limited by bonding wire.

Note ②: UIS tested and pulse width are limited by maximum junction temperature 150℃.

Note ③: Surface Mounted on 1in² FR-4 board with 1oz.

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

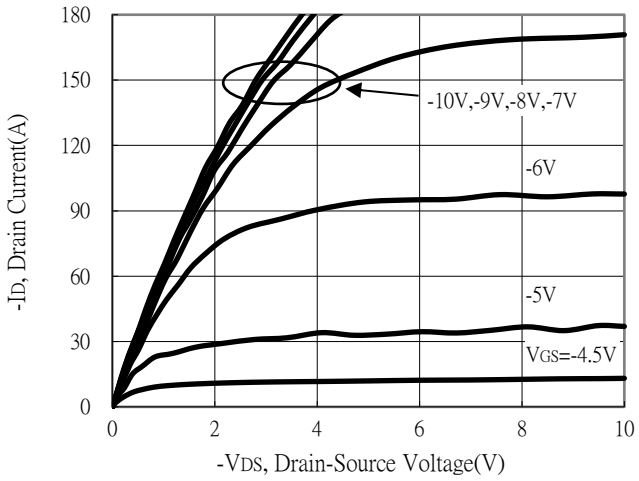
Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Static Electrical Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=-250uA	-80	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-64V, V_{GS}=0V	---	---	-1	uA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=-250uA	-2	---	-4	V
I_{GSS}	Gate Leakage Current	V_{GS}=±20V, V_{DS}=0V	---	---	±100	nA
$R_{DS(ON)}$	Drain-Source On-state Resistance	V_{GS}=-10V, I_D=-10A	---	13	16	mΩ
Dynamic Characteristics⑤						
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=-40V, Freq.=1MHz	---	5150	---	pF
C_{oss}	Output Capacitance		---	360	---	
C_{rss}	Reverse Transfer Capacitance		---	210	---	
$T_{d(on)}$	Turn-on Delay Time	V_{DD}=-40V , V_{GS}=-10V , R_G=1Ω, I_D=-10A,	---	35	---	nS
T_r	Turn-on Rise Time		---	27	---	
$T_{d(off)}$	Turn-off Delay Time		---	73	---	
T_f	Turn-off Fall Time		---	19	---	
Q_g	Total Gate Charge	V_{DS}=-40V , V_{GS}=-10V, I_D=-10A	---	91	---	nC
Q_{gs}	Gate-Source Charge		---	26	---	
Q_{gd}	Gate-Drain Charge		---	26	---	
Source-Drain Characteristics						
V_{SD}④	Diode Forward Voltage	V_{GS}=0V , I_S=-10A , T_J=25℃	---	-0.8	-1.2	V
t_{rr}	Reverse Recovery Time	I_F=-10A , di/dt=100A/μs, T_J=25℃	---	31	---	nS
Q_{rr}	Reverse Recovery Charge		---	40	---	nC

Note ④: Pulse test (pulse width 300us, duty cycle 2%).

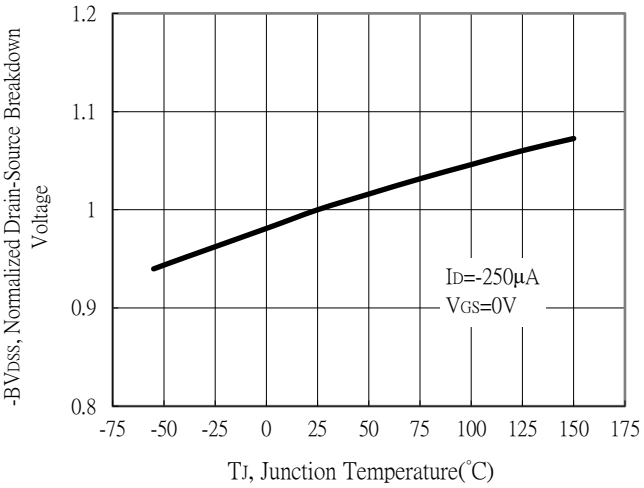
Note ⑤ : Guaranteed by design, not subject to production testing.

Typical Characteristics

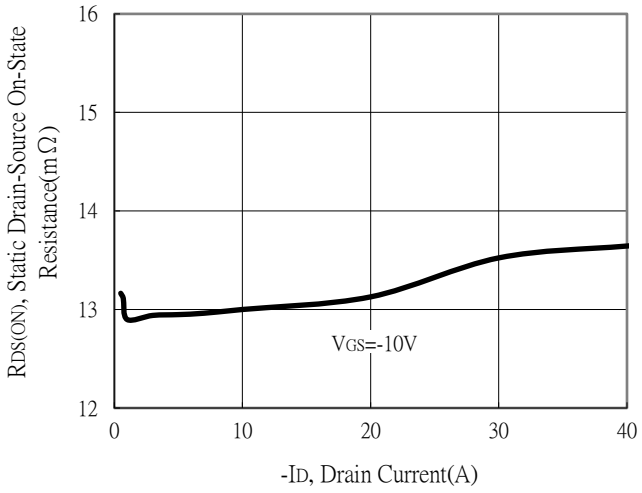
Typical Output Characteristics



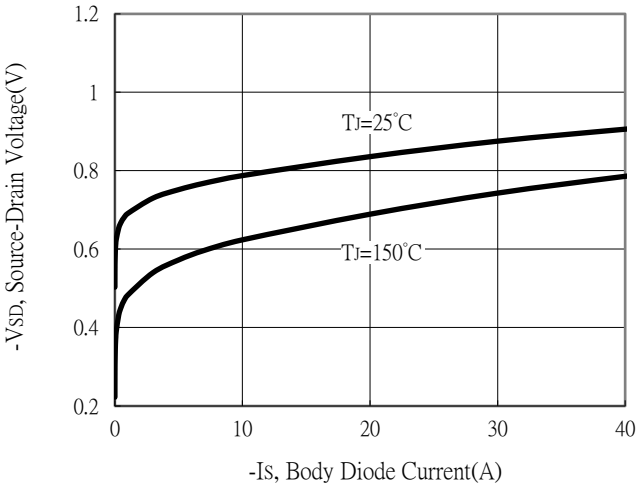
Breakdown Voltage vs Ambient Temperature



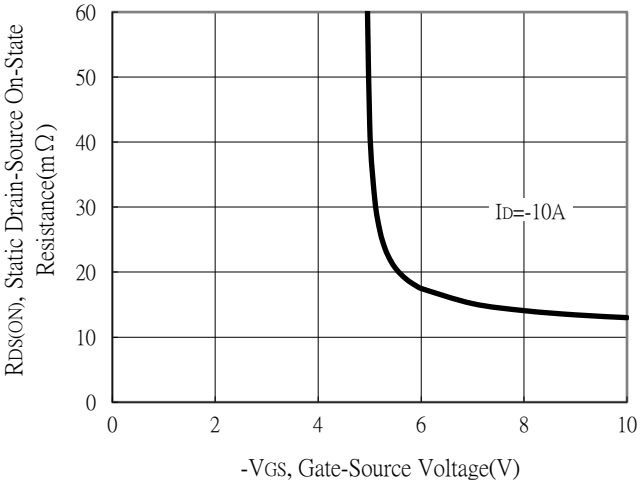
Static Drain-Source On-State resistance vs Drain Current



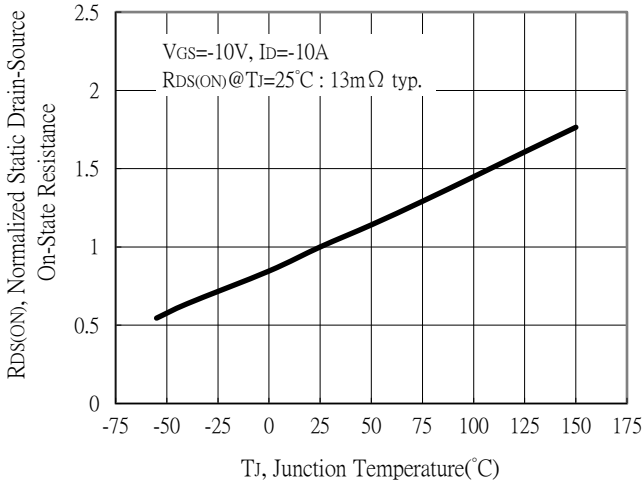
Body Diode Current vs Source-Drain Voltage



Static Drain-Source On-State Resistance vs Gate-Source Voltage

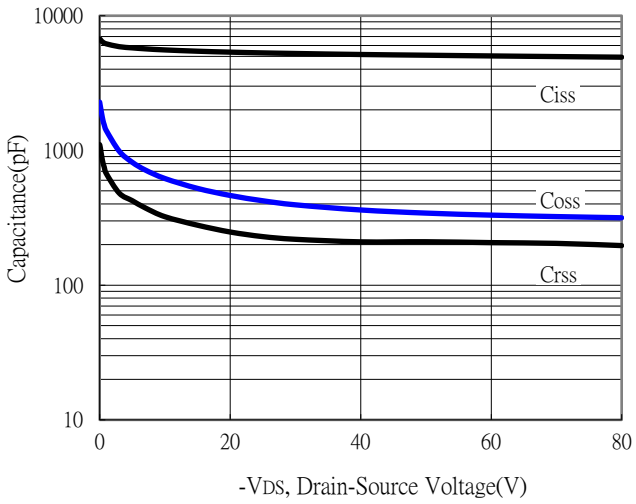


Drain-Source On-State Resistance vs Junction Temperature

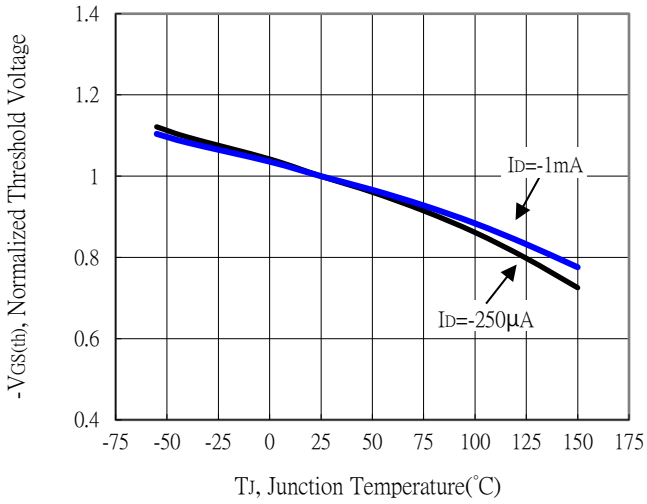


Typical Characteristics (Cont.)

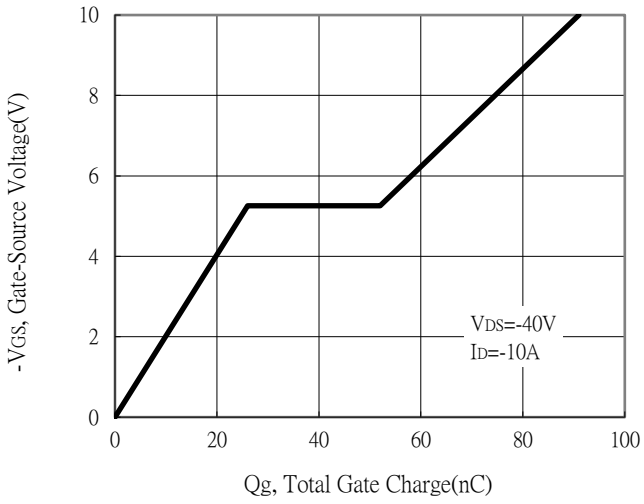
Capacitance vs Drain-to-Source Voltage



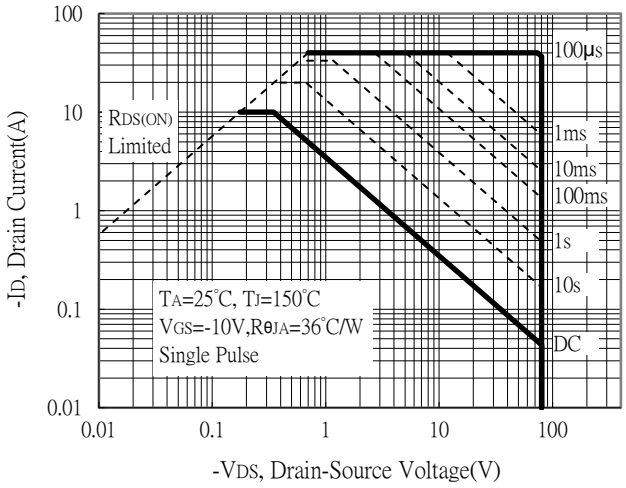
Threshold Voltage vs Junction Temperature



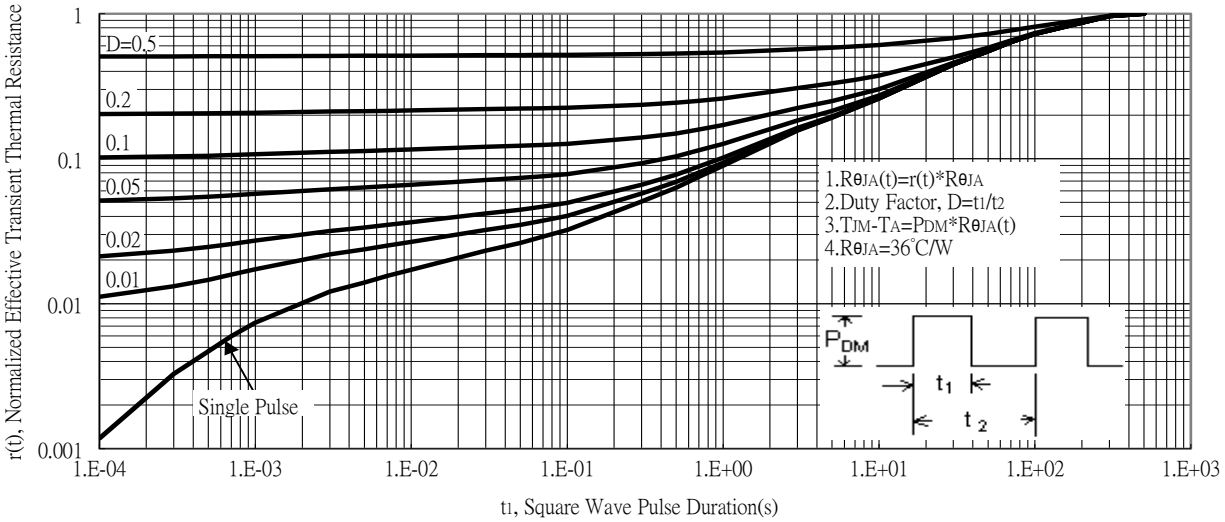
Gate Charge Characteristics



Maximum Safe Operating Area



Transient Thermal Response Curves



TO-263 Package Outline Data