

Features

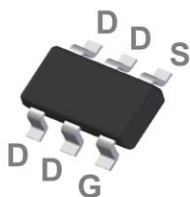
BV_{DSS}	150V
$I_D @ V_{GS}=10V, T_A=25^{\circ}C$	1.5A
$R_{DS(ON)}$ typ. @ $V_{GS}=10V, I_D=1.5A$	240m Ω

Application

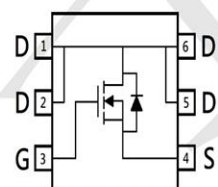
- Notebook
- Load Switch
- Networking
- Hand-held Instruments

Package and Pin Configuration

SOT23-6



Circuit diagram



G: Gate S: Source D: Drain

Marking: 252P Or 40TPM

Absolute Maximum Ratings ($T_A=25^{\circ}C$)

Parameter		Symbol	Limits	Unit
Drain-Source Voltage		V_{DS}	150	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current @ $V_{GS}=10V, T_A=25^{\circ}C$	*a	I_D	1.5	A
Continuous Drain Current @ $V_{GS}=10V, T_A=70^{\circ}C$	*a		1.2	
Pulsed Drain Current	*b	I_{DM}	6	
Continuous Body Diode Forward Current @ $T_A=25^{\circ}C$	*a	I_S	1.3	W
Total Power Dissipation	$T_A=25^{\circ}C$	P_D	1.6	
	$T_A=70^{\circ}C$		1	
Operating Junction and Storage Temperature Range		T_J, T_{stg}	-55~+150	$^{\circ}C$

Thermal Data

Parameter		Symbol	Steady State	Unit
Thermal Resistance, Junction-to-ambient	*a	$R_{\theta JA}$	80	$^{\circ}C/W$

Electrical Characteristics (T_A=25°C, unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Static					
BV _{DSS}	150	-	-	V	V _{GS} =0V, I _D =250μA
V _{GS(th)}	1.5	-	3.5		V _{DS} =V _{GS} , I _D =250μA
I _{GSS}	-	-	±100	nA	V _{GS} =±20V, V _{DS} =0V
I _{DSS}	-	-	1	μA	V _{DS} =120V, V _{GS} =0V
R _{DS(ON)}	-	240	320	mΩ	V _{GS} =10V, I _D =1.5A
Dynamic					
C _{iss}	-	250	-	pF	V _{DS} =75V, V _{GS} =0V, f=1MHz
C _{oss}	-	25	-		
C _{rss}	-	12	-		
R _g	-	2	-	Ω	f=1MHz
Q _g *1, 2	-	6	-	nC	V _{DS} =75V, I _D =1A, V _{GS} =10V
Q _{gs} *1, 2	-	1.5	-		
Q _{gd} *1, 2	-	1.8	-		
t _{d(ON)} *1, 2	-	6	-	ns	V _{DS} =75V, I _D =1A, V _{GS} =10V, R _{GS} =6Ω
t _r *1, 2	-	7	-		
t _{d(OFF)} *1, 2	-	13	-		
t _f *1, 2	-	6	-		
Source-Drain Diode					
V _{SD} *1	-	0.8	1.2	V	I _S =1A, V _{GS} =0V
t _{rr}	-	32	-	ns	I _F =1A, dI _F /dt=100A/μs
Q _{rr}	-	46	-	nC	

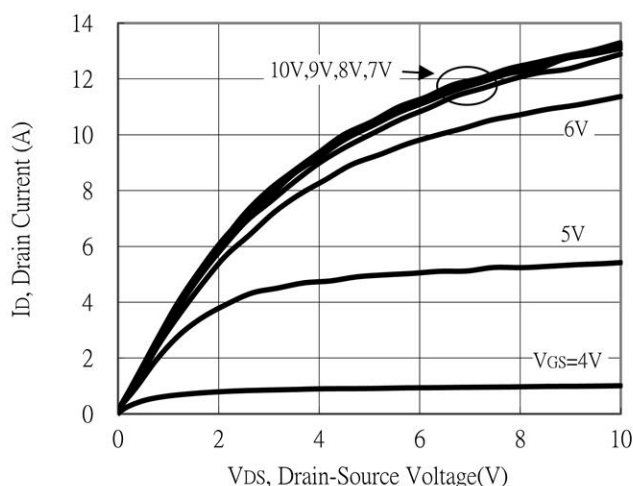
Note:

*1. Pulse Test : Pulse Width ≤300μs, Duty Cycle ≤2%

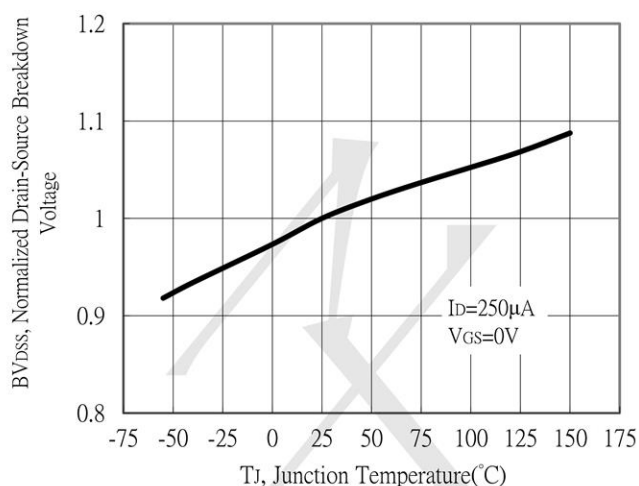
*2. Independent of operating temperature

Typical Electrical and Thermal Characteristics

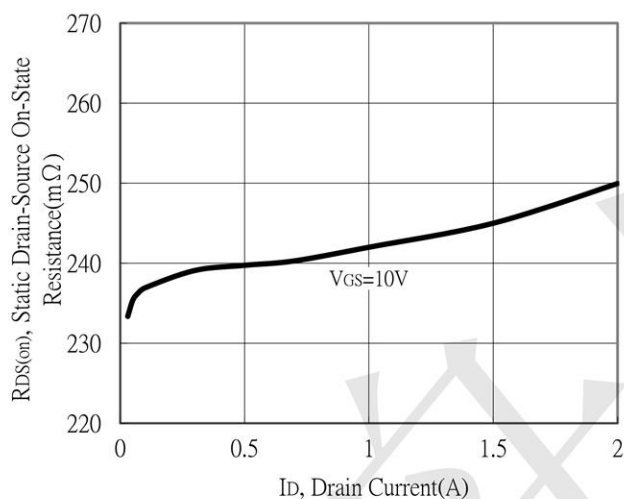
Typical Output Characteristics



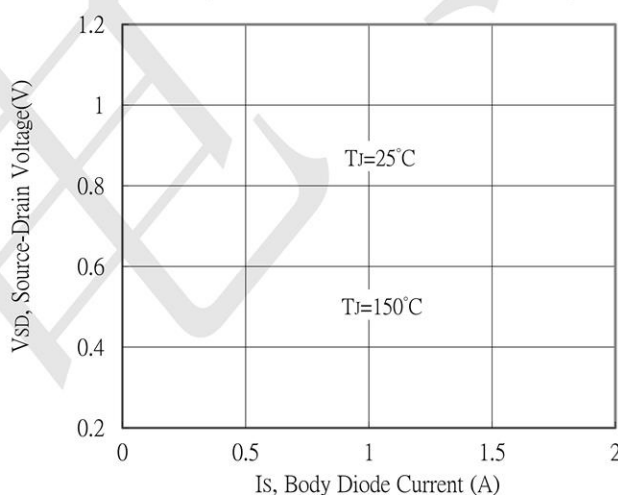
Breakdown Voltage vs Ambient Temperature



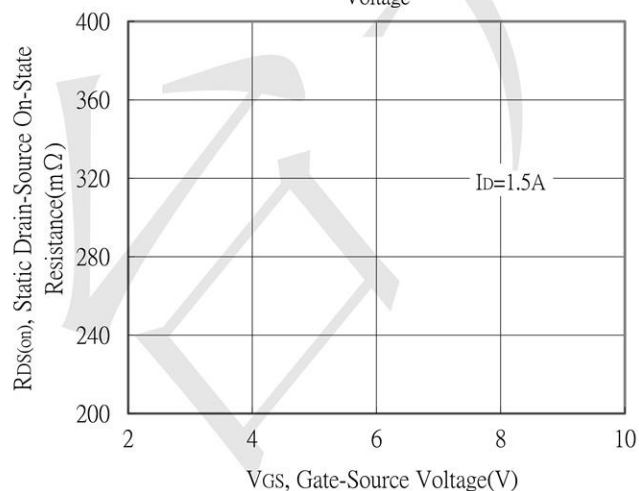
Static Drain-Source On-State resistance vs Drain Current



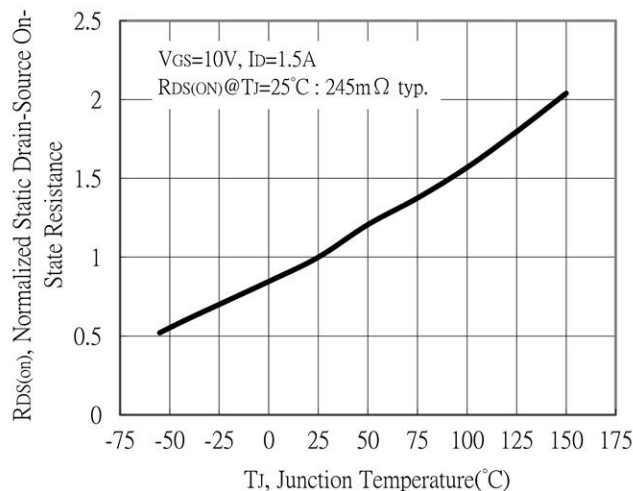
Body Diode Current vs Source-Drain Voltage



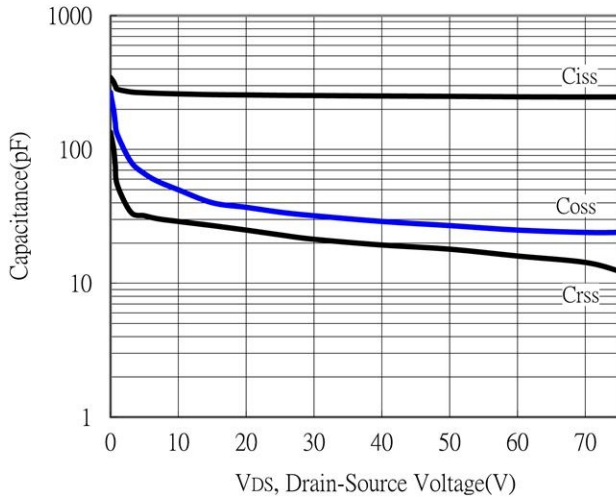
Static Drain-Source On-State Resistance vs Gate-Source Voltage



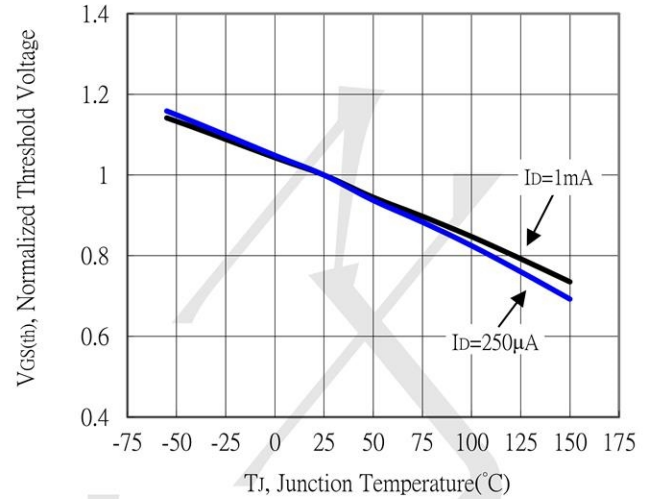
Drain-Source On-State Resistance vs Junction Temperature



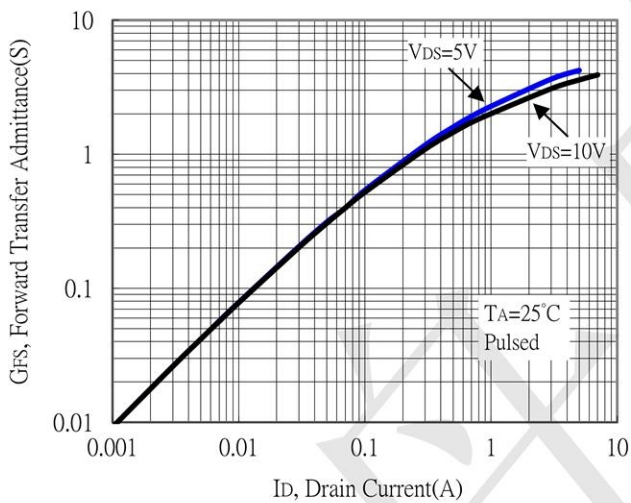
Capacitance vs Drain-to-Source Voltage



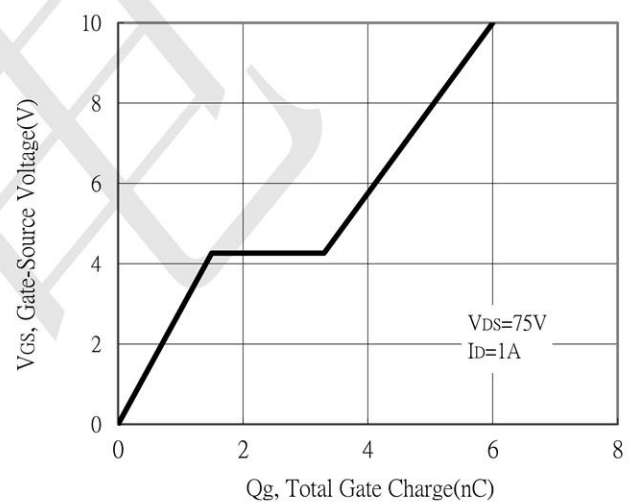
Threshold Voltage vs Junction Temperature



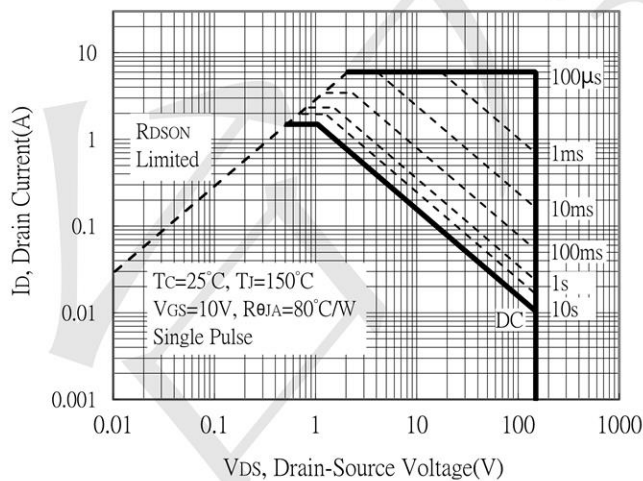
Forward Transfer Admittance vs Drain Current



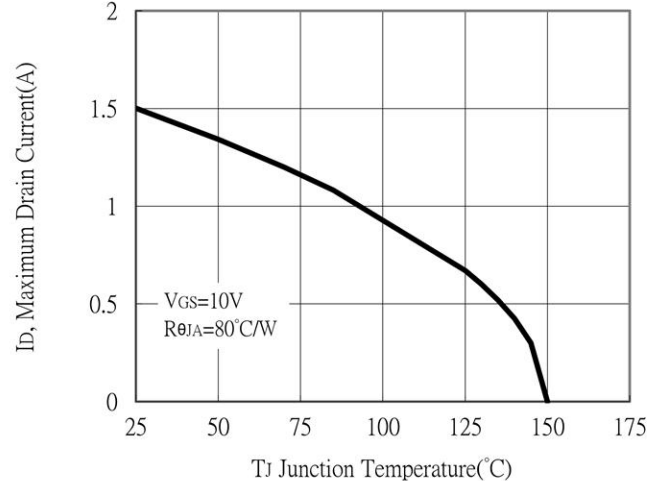
Gate Charge Characteristics



Maximum Safe Operating Area

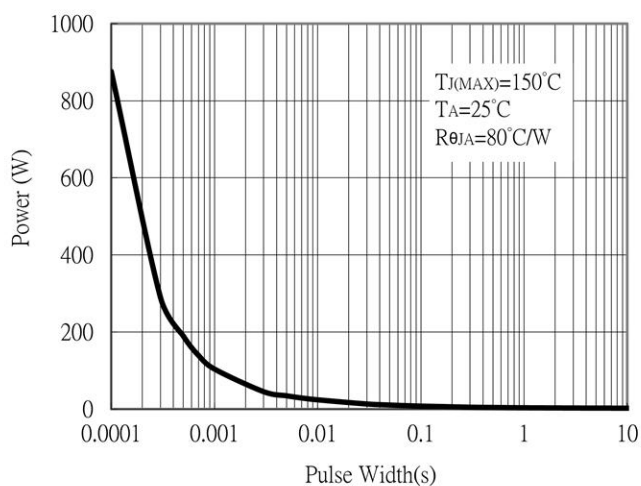


Maximum Drain Current vs Junction Temperature

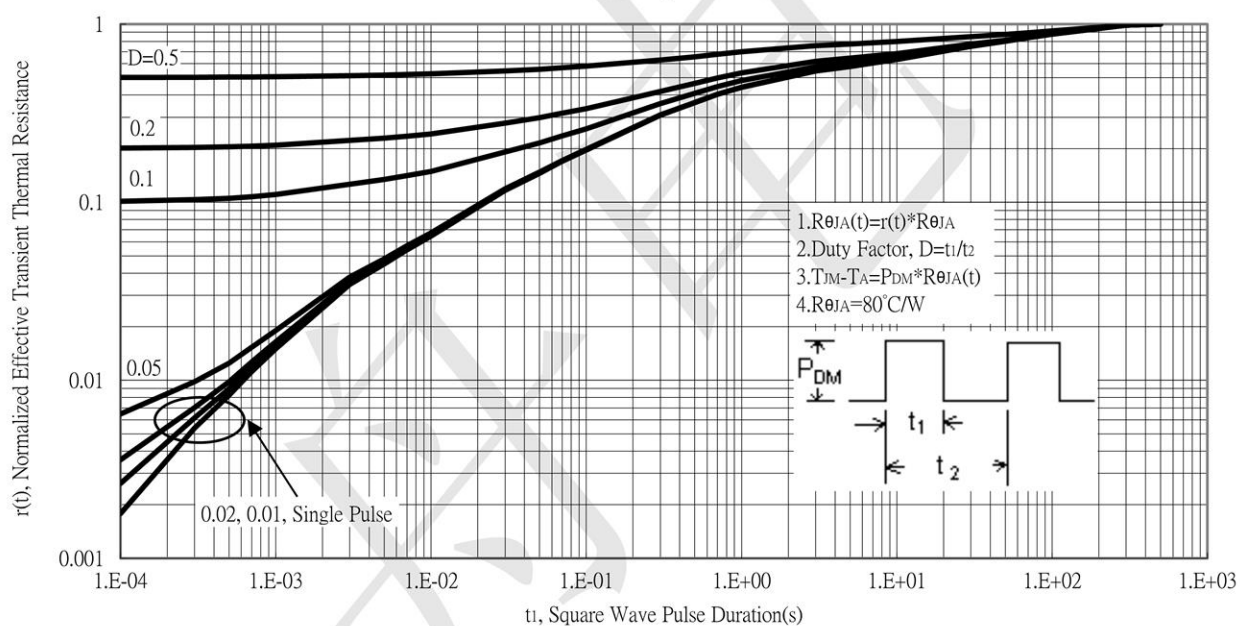


Typical Characteristics (Cont.)

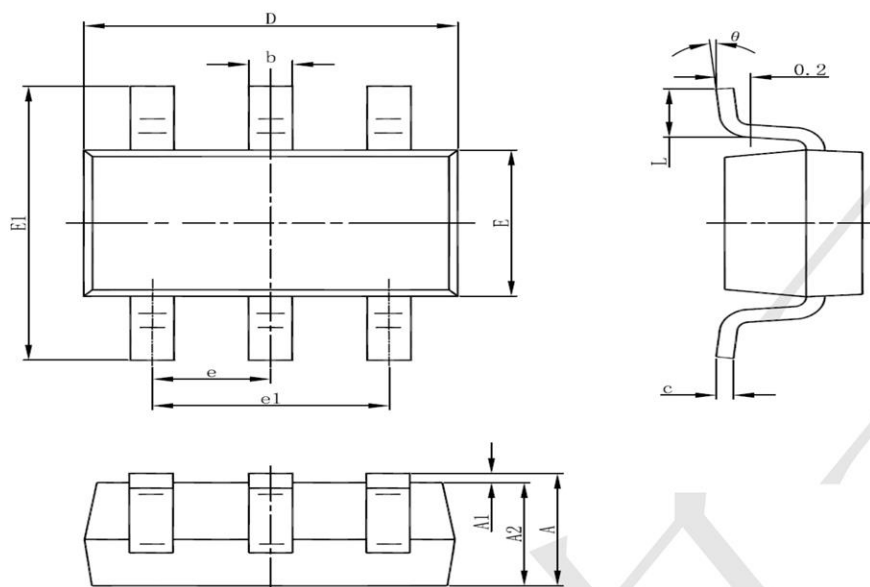
Single Pulse Power Rating, Junction to Ambient



Transient Thermal Response Curves



SOT23-6 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°