

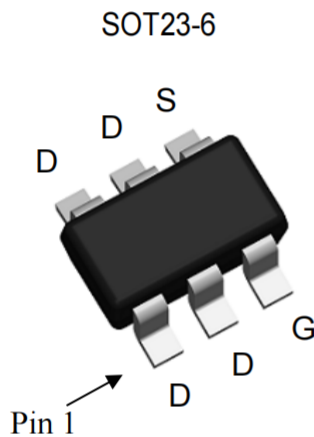
**General Features**

$BV_{DSS}$	-150V
$I_D @ V_{GS} = -10V, T_A = 25^\circ C$	-0.85A
$R_{DS(ON) typ. @ V_{GS} = -10V, I_D = -0.5A}$	$0.8 \Omega$

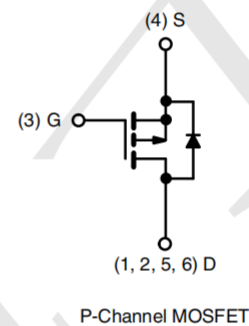
**Application**

- Low On Resistance
- Low Gate Charge
- Fast Switching Characteristic

**Package and Pin Configuration**



**Block Diagram**



**Marking: EP15**

**Absolute Maximum Ratings ( $T_A = 25^\circ C$  unless otherwise noted)**

Parameter	Symbol	Limits	Unit	
Drain-Source Voltage	$V_{DS}$	-150	V	
Gate-Source Voltage	$V_{GS}$	$\pm 20$		
Continuous Drain Current @ $V_{GS} = -10V, T_A = 25^\circ C$	$I_D$	-0.85	A	
Continuous Drain Current @ $V_{GS} = -10V, T_A = 70^\circ C$		-0.68		
Pulsed Drain Current		$I_{DM}$		-3.4
Continuous Body Diode Forward Current @ $T_A = 25^\circ C$	$I_S$	-0.85		
Total Power Dissipation	$P_D$	$T_A = 25^\circ C$	1.5	W
		$T_A = 70^\circ C$	1	
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55~+150	$^\circ C$	

**Thermal Data**

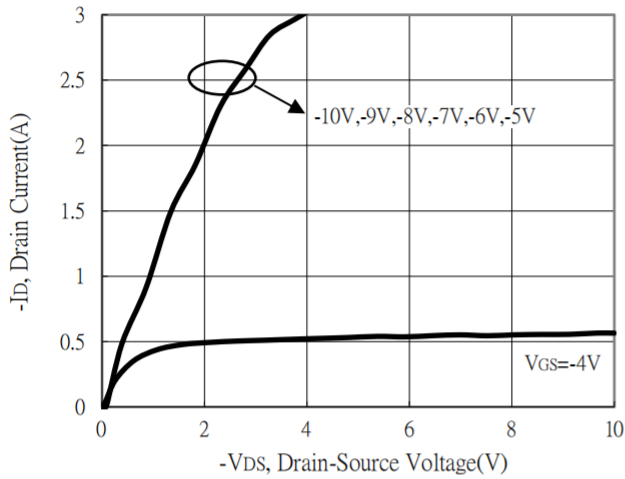
Parameter	Symbol	Steady State	Unit
Thermal Resistance, Junction-to-ambient	$R_{\theta JA}$	81	$^\circ C/W$

**Electrical Characteristics (T<sub>A</sub>=25°C, unless otherwise specified)**

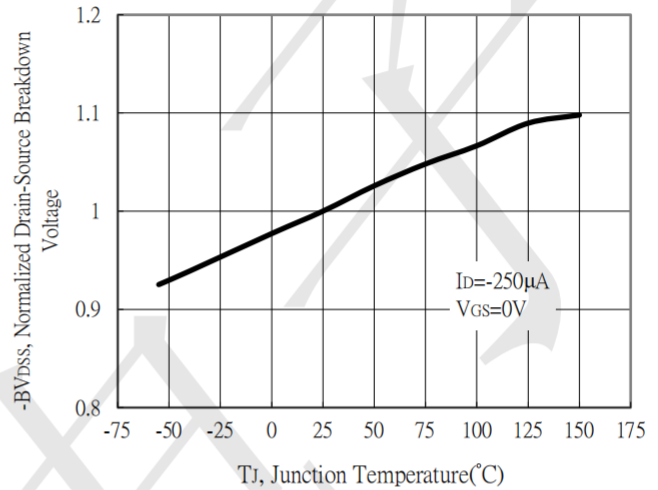
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
<b>Static</b>					
BV <sub>DSS</sub>	-150	-	-	V	V <sub>GS</sub> =0V, I <sub>D</sub> =-250μA
V <sub>GS(th)</sub>	-2	-	-4		V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250μA
G <sub>FS</sub>	-	1.6	-	S	V <sub>DS</sub> =-10V, I <sub>D</sub> =-0.5A
I <sub>GSS</sub>	-	-	±100	nA	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V
I <sub>DSS</sub>	-	-	-1	μA	V <sub>DS</sub> =-120V, V <sub>GS</sub> =0V
R <sub>DSON</sub>	-	0.8	1.05	Ω	V <sub>GS</sub> =-10V, I <sub>D</sub> =-0.5A
<b>Dynamic</b>					
C <sub>iss</sub>	-	280	-	pF	V <sub>DS</sub> =-75V, V <sub>GS</sub> =0V, f=1MHz
C <sub>oss</sub>	-	20	-		
C <sub>rss</sub>	-	14	-		
R <sub>g</sub>	-	5.7	-	Ω	f=1MHz
Q <sub>g</sub> *1,2	-	6.9	-	nC	V <sub>DS</sub> =-75V, I <sub>D</sub> =-0.5A, V <sub>GS</sub> =-10V
Q <sub>gs</sub> *1,2	-	1.5	-		
Q <sub>gd</sub> *1,2	-	1.8	-		
t <sub>d(ON)</sub> *1,2	-	7	-	ns	V <sub>DS</sub> =-75V, I <sub>D</sub> =-0.5A, V <sub>GS</sub> =-10V, R <sub>G</sub> =6Ω
t <sub>r</sub> *1,2	-	17	-		
t <sub>d(OFF)</sub> *1,2	-	18	-		
t <sub>f</sub> *1,2	-	18	-		
<b>Source-Drain Diode</b>					
V <sub>SD</sub> *1	-	-0.77	-1.2	V	I <sub>S</sub> =-0.5A, V <sub>GS</sub> =0V
t <sub>rr</sub>	-	27	-	ns	I <sub>F</sub> =-0.5A, dI <sub>F</sub> /dt=100A/μs
Q <sub>rr</sub>	-	25	-	nC	

**Typical Characteristics**

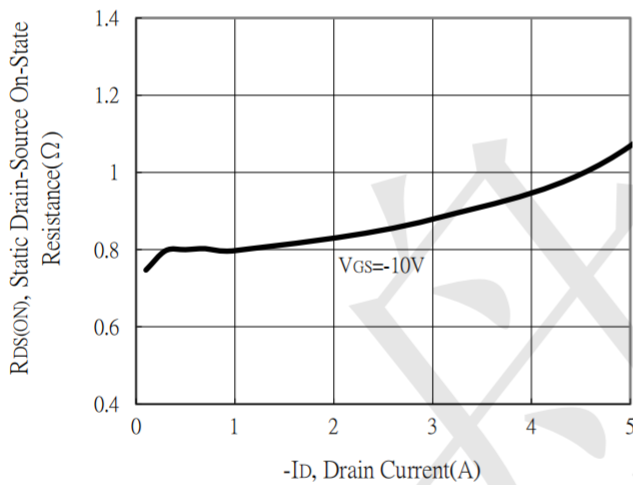
Typical Output Characteristics



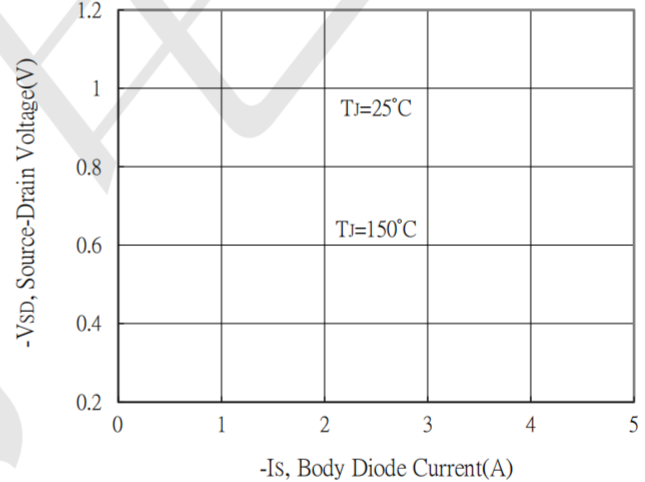
Breakdown Voltage vs Ambient Temperature



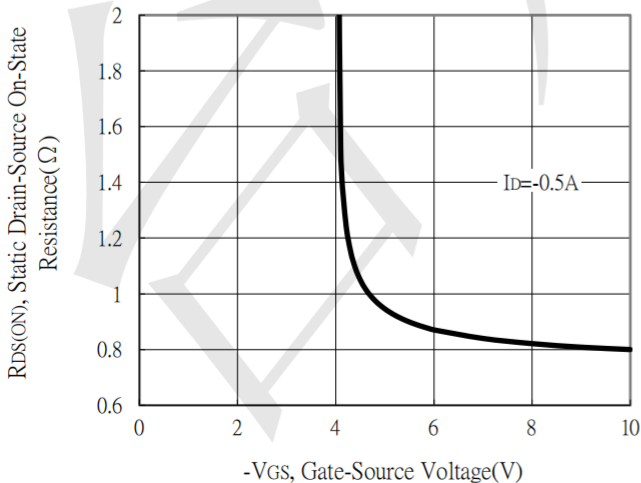
Static Drain-Source On-State resistance vs Drain Current



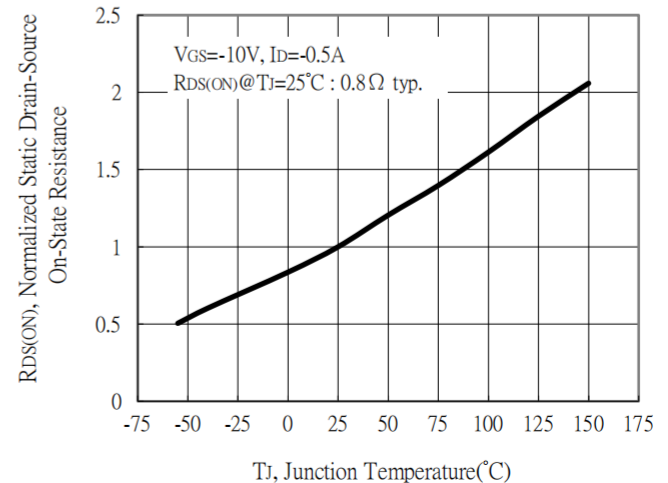
Body Diode Current vs Source-Drain Voltage



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

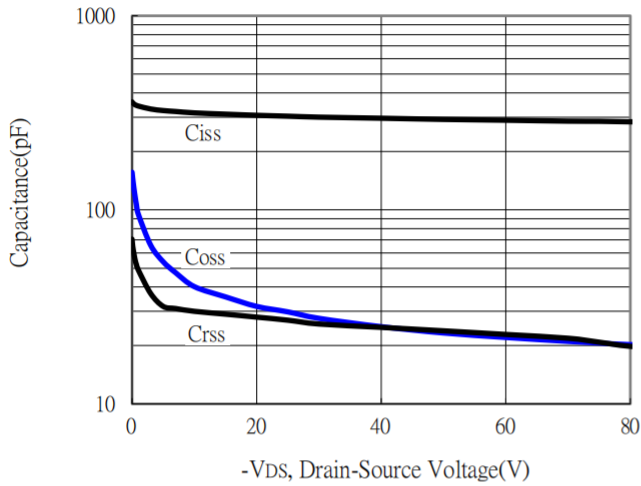


Drain-Source On-State Resistance vs Junction Temperature

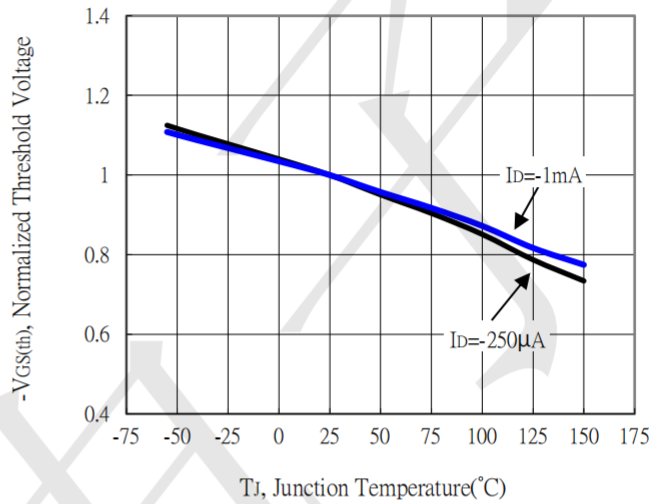


**Typical Characteristics (Cont.)**

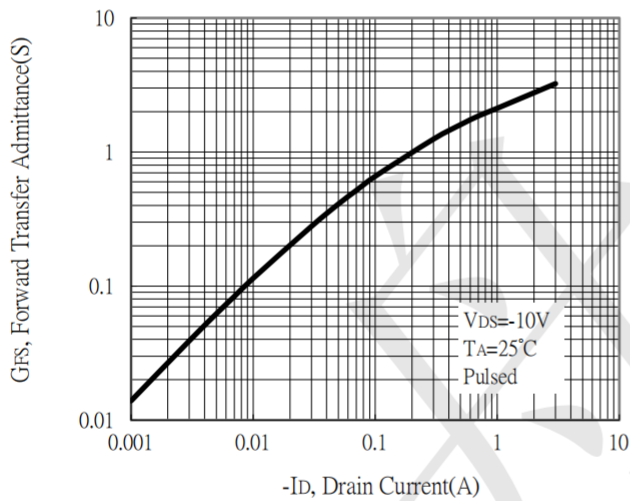
Capacitance vs Drain-to-Source Voltage



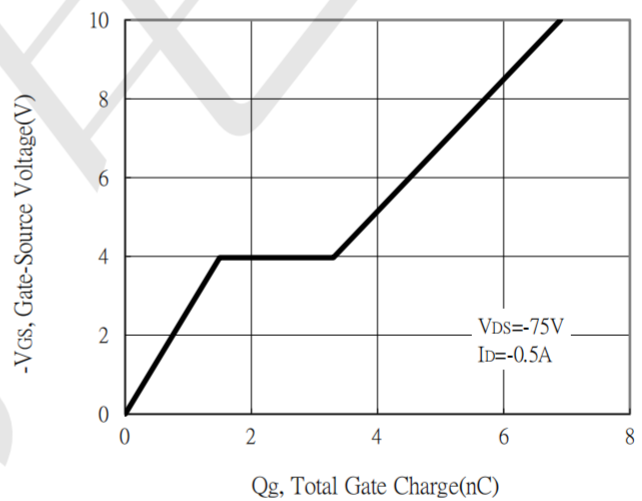
Threshold Voltage vs Junction Temperature



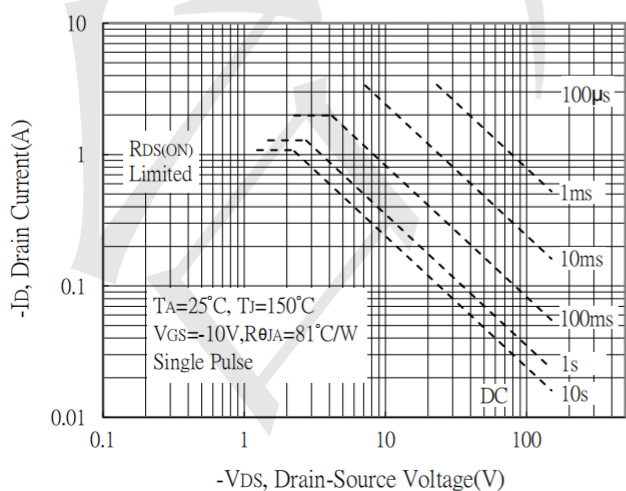
Forward Transfer Admittance vs Drain Current



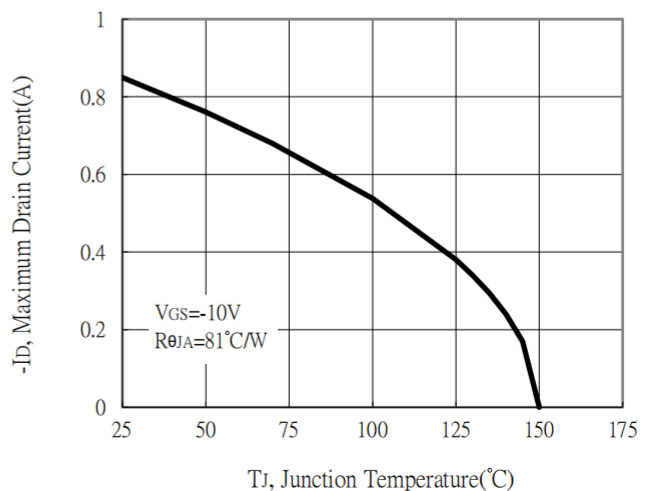
Gate Charge Characteristics



Maximum Safe Operating Area

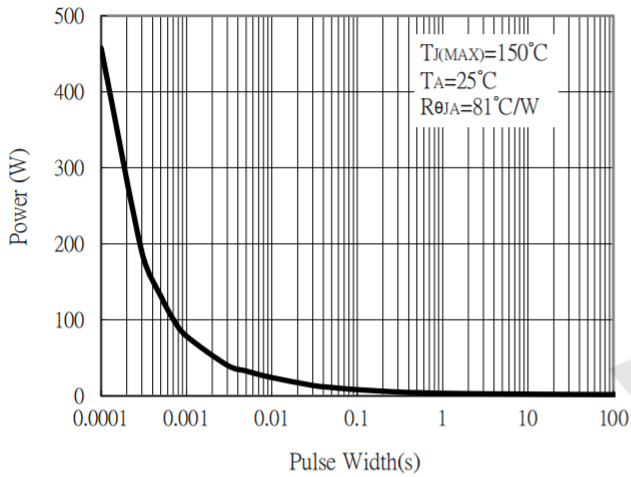


Maximum Drain Current vs Junction Temperature

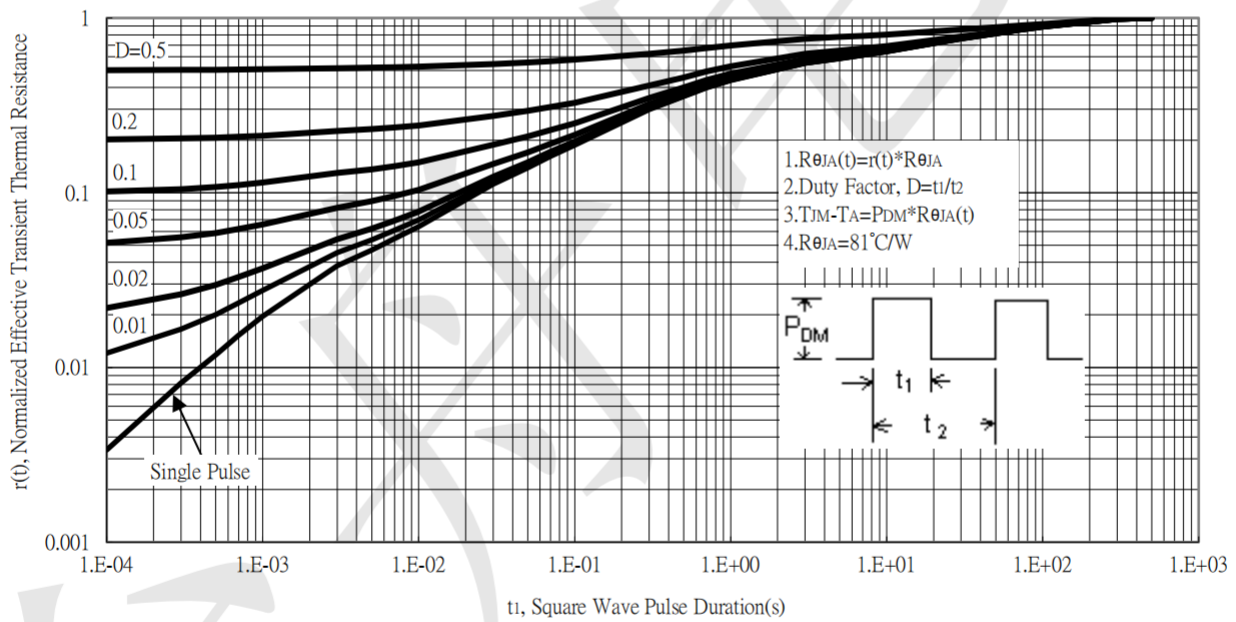


**Typical Characteristics (Cont.)**

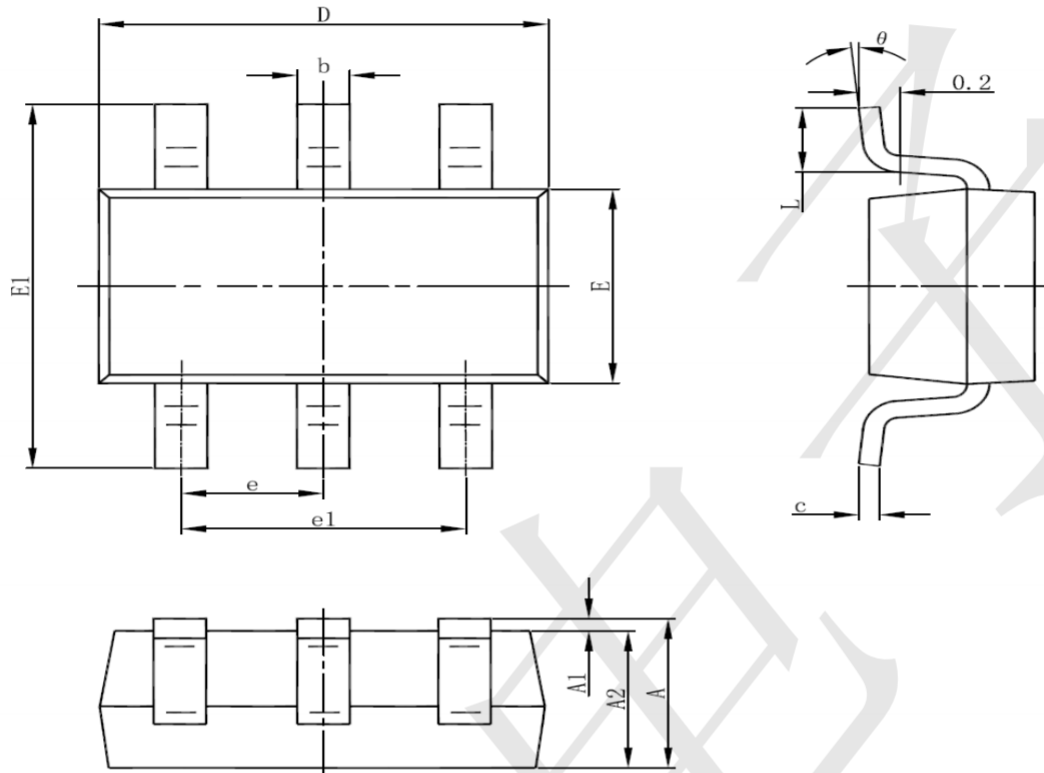
Single Pulse Power Rating, Junction to Ambient



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
$\theta$	0°	8°	0°	8°

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