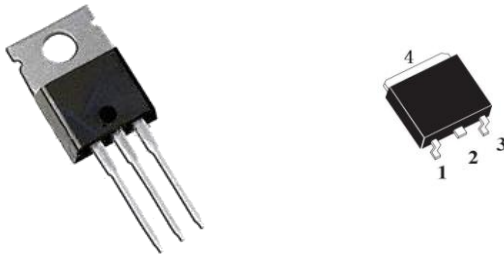


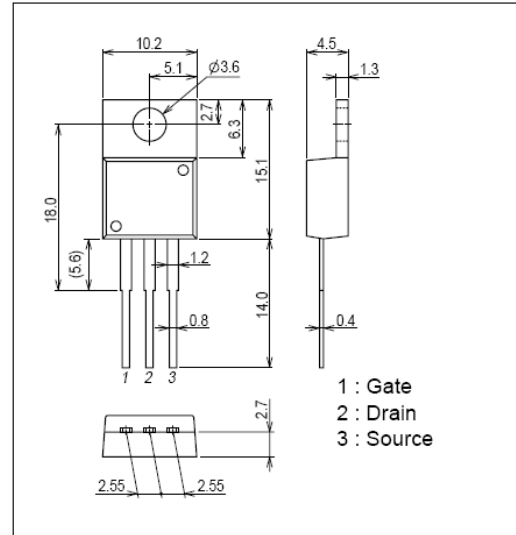
Features

- Low On resistance.
- 10V drive.
- RoHS compliant.



Package Dimensions

TO-220 TO-252



Specifications

Absolute Maximum Ratings at $T_a=25^{\circ}\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		100	V
Gate-to-Source Voltage	V_{GSS}		± 20	V
Drain Current (DC)	I_D		30	A
Drain Current (Pulse)	I_{DP}	$PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$	70	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board ($1000\text{mm}^2 \times 0.8\text{mm}$) 1unit	75	W
Single pulse avalanche energy	E_{AS}		256	mJ
Channel Temperature	T_{ch}		150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}		-55~+150	$^{\circ}\text{C}$

Electrical Characteristics at $T_a=25^{\circ}\text{C}$

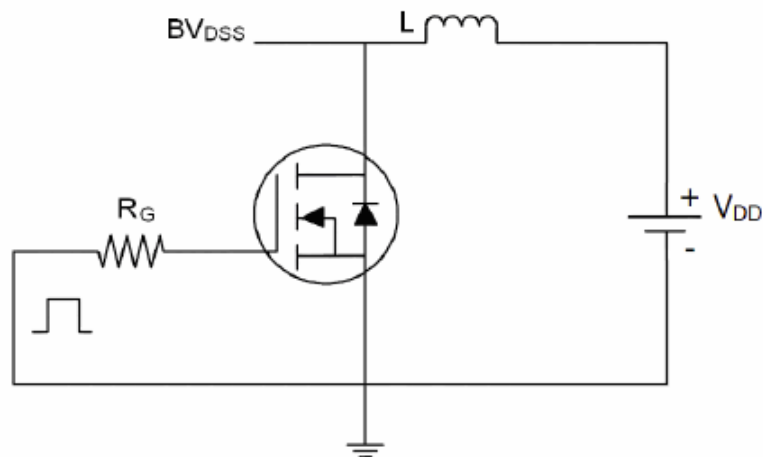
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=250\mu\text{A}$, $V_{GS}=0\text{V}$	100	-	-	V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS}=100\text{V}$, $V_{GS}=0\text{V}$	-	-	1	μA
Gate-to-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20\text{V}$, $V_{DS}=0\text{V}$	-	-	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$	2	3	4	V
Static Drain-to-Source On-State Resistance	$R_{DS(ON)}$	$I_D=15\text{A}$, $V_{GS}=10\text{V}$	-	24	28	$\text{m}\Omega$
Input Capacitance	C_{iss}	$V_{DS}=25\text{V}$, $V_{GS}=0\text{V}$, $f=1\text{MHz}$	-	2000	-	pF
Output Capacitance	C_{oss}	$V_{DS}=25\text{V}$, $V_{GS}=0\text{V}$, $f=1\text{MHz}$	-	300	-	pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=25\text{V}$, $V_{GS}=0\text{V}$, $f=1\text{MHz}$	-	250	-	pF

Electrical Characteristics at $T_a=25^{\circ}\text{C}$ (Continued)

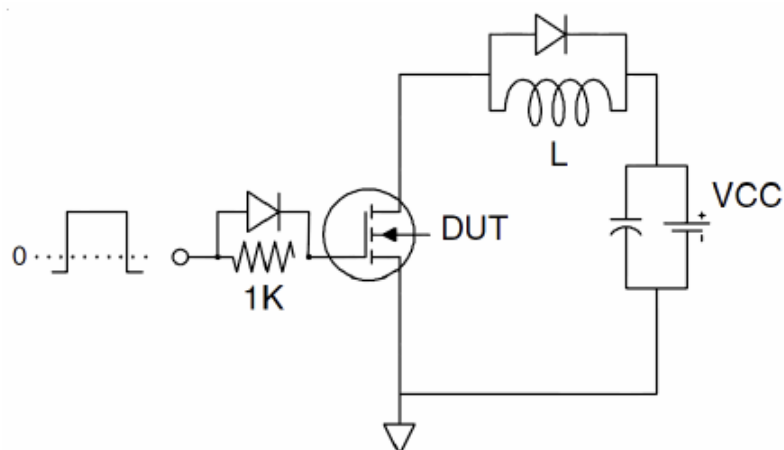
Parameter	Symbol	Conditions	Ratings			Unit
			min	Typ	max	
Turn-on Delay Time	$t_{d(on)}$	$V_{DS}=50\text{V}, R_L=5\Omega, R_{GEN}=3\Omega, V_{GS}=10\text{V}$	-	7	-	nS
Rise Time	t_r		-	7	-	nS
Turn-off Delay Time	$t_{d(off)}$		-	29	-	nS
Fall Time	t_f		-	7	-	nS
Total Gate Charge	Q_g	$V_{DS}=50\text{V}, V_{GS}=10\text{V}, I_D=18\text{A}$	-	39	-	nC
Gate-to-Source Charge	Q_{gs}		-	8	-	nC
Gate-to-Drain "Miller" Charge	Q_{gd}		-	12	-	nC
Diode Forward Voltage	V_{SD}	$I_S=20\text{A}, V_{GS}=0\text{V}$	-	-	1.2	V

Test Circuit

1) E_{AS} Test Circuit



2) Gate Charge Test Circuit



Typical Characteristics at $T_a=25^{\circ}\text{C}$

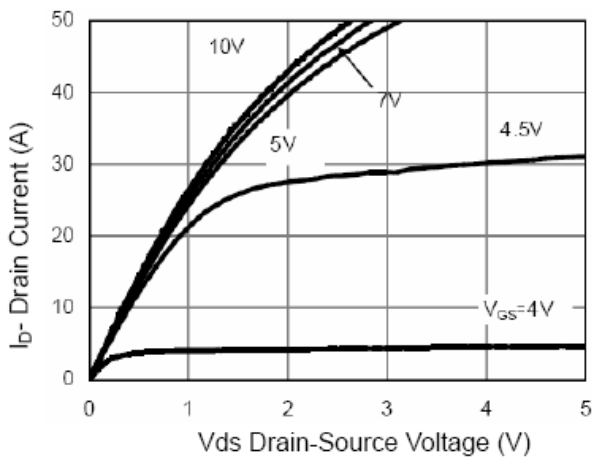


Figure 1 Output Characteristics

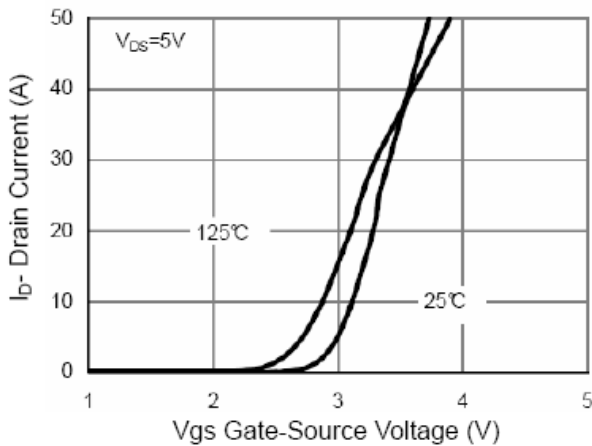


Figure 2 Transfer Characteristics

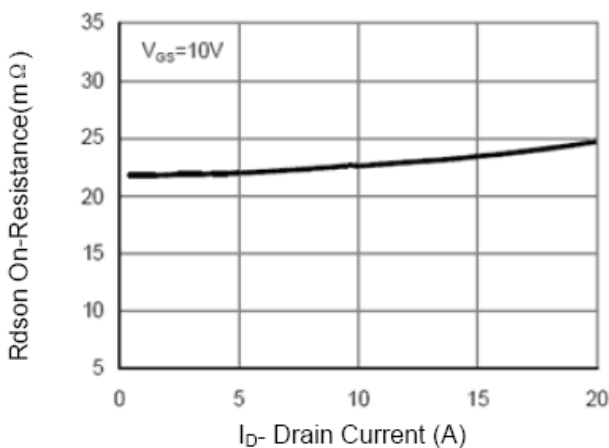


Figure 3 Rdson- Drain Current

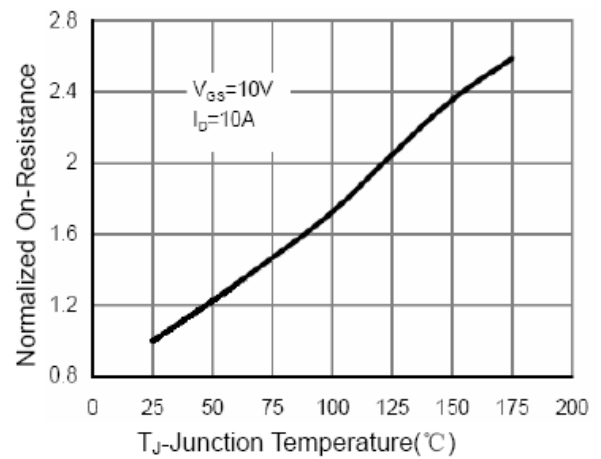


Figure 4 Rdson-Junction Temperature

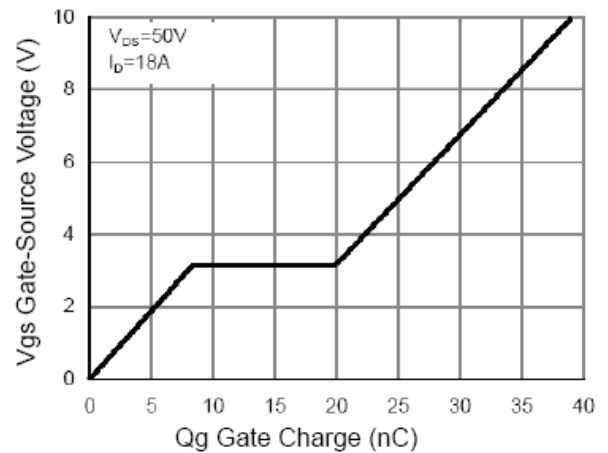


Figure 5 Gate Charge

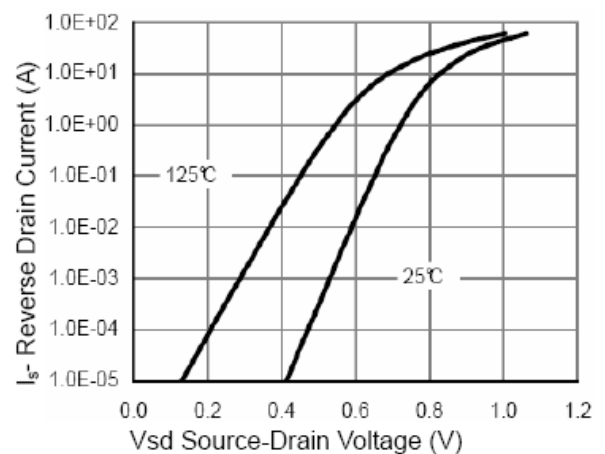


Figure 6 Source- Drain Diode Forward

Typical Characteristics at $T_a=25^{\circ}\text{C}$

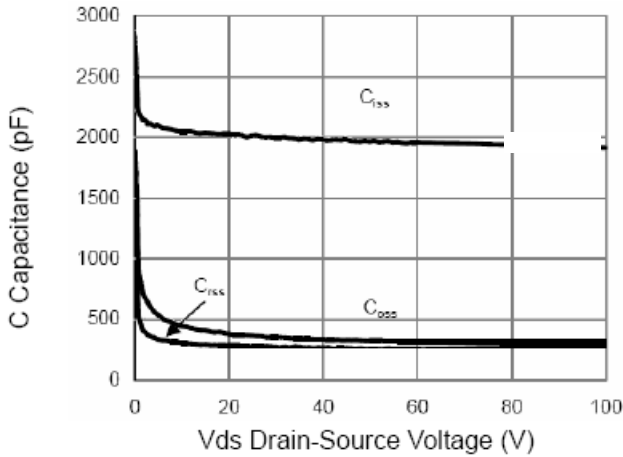


Figure 7 Capacitance vs Vds

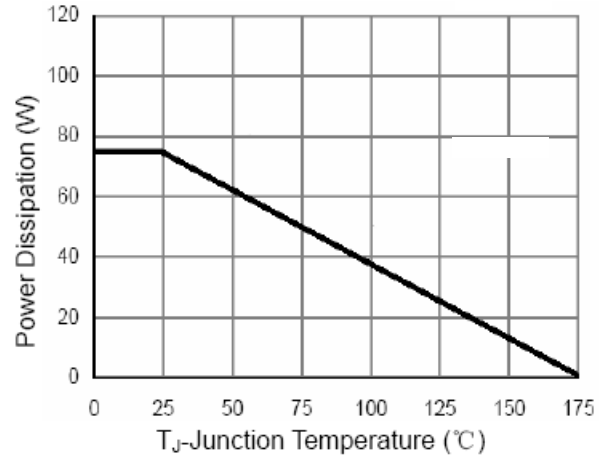


Figure 9 Power De-rating

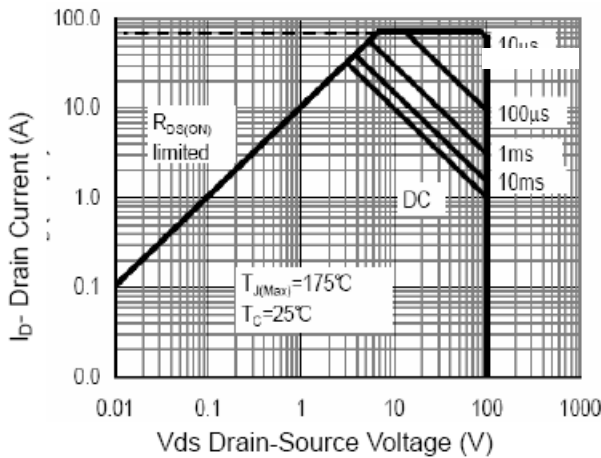


Figure 8 Safe Operation Area

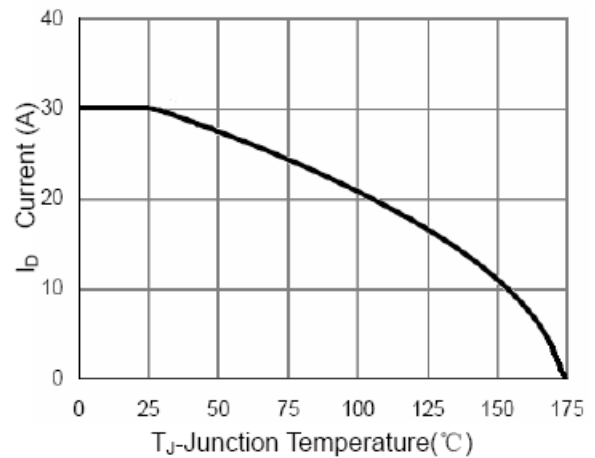


Figure 10 ID Current- Junction Temperature

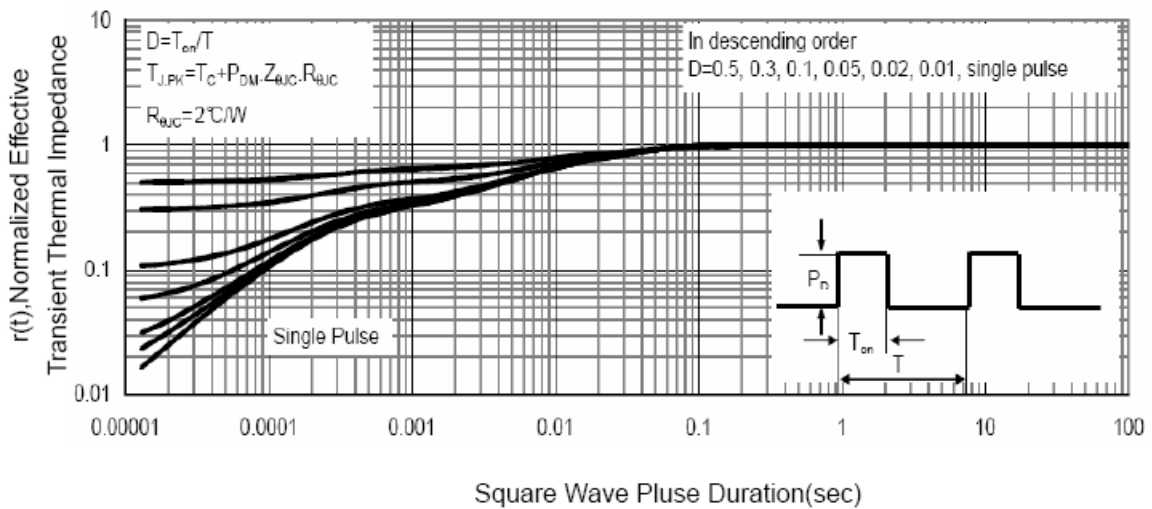


Figure 11 Normalized Maximum Transient Thermal Impedance